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ABSTRACT

The Ohio Adult Literacy Survey, like the National Adult Literacy Survey of which it is a part, aimed to characterize adults' literacy skills in English based on their performance on diverse tasks that reflect the types of materials and demands they encounter in their daily lives. To gather information on the literacy skills of adults in Ohio, trained staff interviewed The development of inclusive adult literacy, language, and numeracy curricula months of 1992. The 1,600 randomly chosen participants were representative of the 8.3 million adults in the state as a whole. Each survey participant was asked to spend approximately an hour responding to a series of varied literacy tasks as well as questions about his or her demographic characteristics, educational background, employment, income, reading practices, and other areas related to literacy. Based on their responses to the survey tasks, adults received proficiency scores along three scales reflecting degrees of skill in prose, document, and quantitative literacy. Some of the results were as follows: (1) 16-18 percent of the respondents demonstrated skills in the lowest level of the scale; (2) 27-31 percent of the respondents performed in the next higher level of proficiency, and approximately one-third of the participants performed in the third level of proficiency; (3) approximately 18 percent of the respondents performed at the highest level; (4) the Ohio averages were almost identical to the Midwest averages and higher than the country as a whole; (5) older adults were more likely than middle-aged and younger adults to demonstrate limited literacy skills; (6) average literacy proficiencies rose with years of schooling completed; (7) employed respondents were less likely than the unemployed to have low literacy skills; (8) respondents with the highest literacy levels were most likely to earn the highest incomes; (9) persons who watched the most television had lower average proficiencies than those who watched the least; and (10) adults who used the skills tested in their jobs or lives were more proficient in them than those who did not. (The report contains 80 tables of statistical data on the survey and 3 appendixes that explain the research methodology of the survey.) (KC)

ED 371 178

ADULT LITERACY in Ohio

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Results of the
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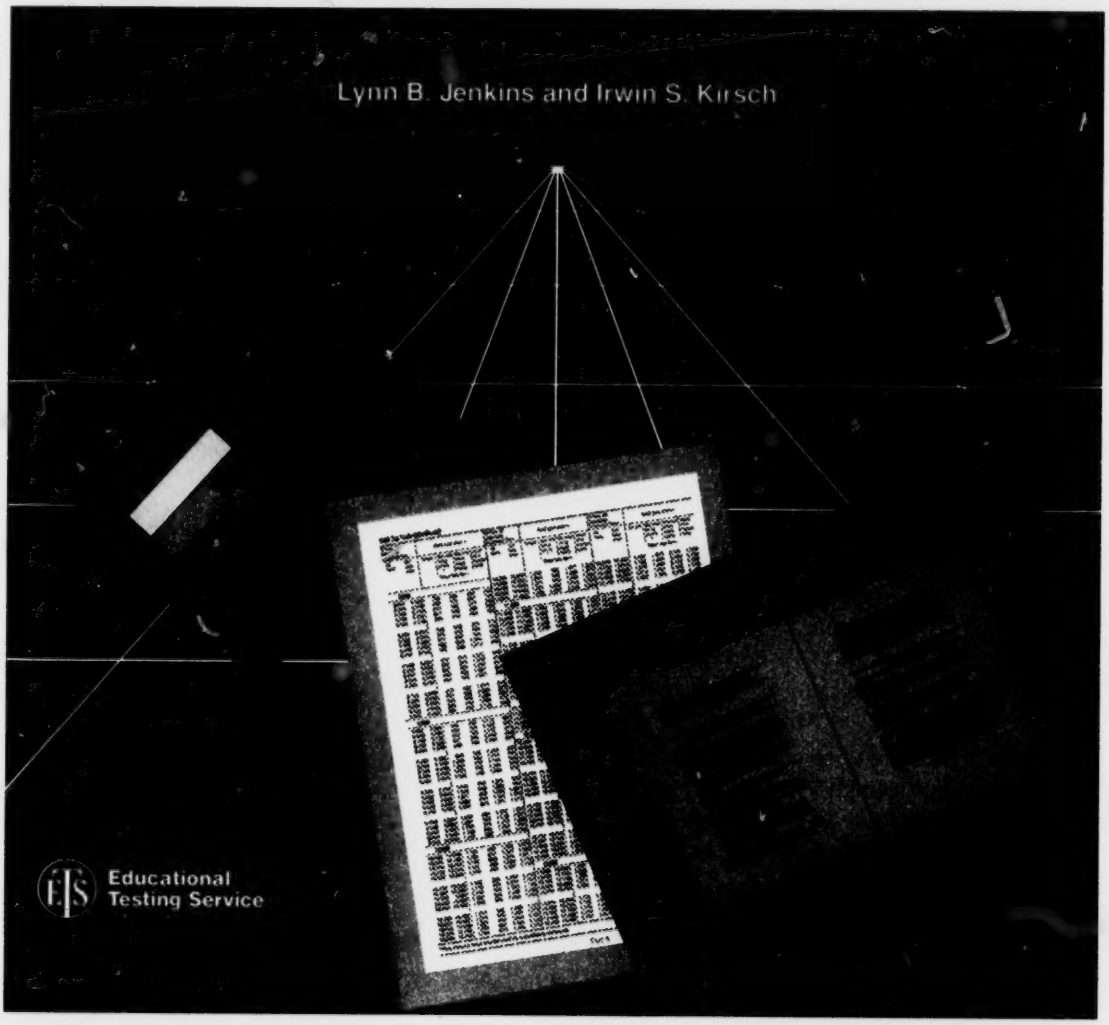

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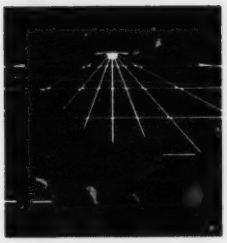

PREFACE

Perhaps never before have so many people from so many different sectors of our society been concerned about adult literacy. Numerous reports published in the last decade have indicated that a large portion of the United States population lacks adequate literacy skills, and many employers say they cannot find enough workers with the reading, writing, mathematical, and other competencies required in the workplace. Changing economic, demographic, and labor-market forces may exacerbate the problem in the future.

Whether the gap between our nation's literacy resources and its literacy needs will widen remains an open question; the evidence to prove or discredit such predictions is scarce. Many believe, however, that we must respond to the literacy challenge if we are to preserve our nation's economic vitality and ensure that every individual has a full range of opportunities for personal fulfillment and participation in society.

This view was reaffirmed at the historic education summit in Charlottesville, Virginia, where the nation's governors — including Governor Clinton — met with President Bush to establish a set of national education goals for the twenty-first century. As adopted in 1990 by members of the National Governors' Association, one of the six goals states:

> ***By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.***

But how should this ambitious goal be pursued? In the past, whenever the population's skills were questioned, critics tended to focus on the educational system and insist that school reforms were needed if the nation were to escape serious social and economic consequences. Yet, many who need to improve their literacy skills have already left school. In fact, it is estimated that almost 80 percent of the work force for the year 2000 is already employed. Clearly, then, the schools alone cannot address our nation's literacy needs. A broader response is necessary.

To initiate such a response, we need more than localized reports or anecdotes from employers, public leaders, or the press. Accurate and detailed information is essential. Surprisingly, though, we lack answers to even the most basic questions, including how many individuals have limited literacy skills, who are they, and how severe are their problems.

In 1988, Congress asked the U.S. Department of Education to address this need by reporting on the nature and extent of adult literacy in this nation. In response, the Department's National Center for Education Statistics and Division of Adult Education and Literacy called for a national household survey of adult literacy. A contract was awarded to Educational Testing Service and a subcontract to Westat, Inc., to design and conduct the National Adult Literacy Survey. To give states an opportunity to explore the literacy skills of their own populations, all 50 states were invited to participate in the State Adult Literacy Survey, a concurrent study that would provide state-level results.

During the first eight months of 1992, trained staff visited thousands of households across the nation to interview adults age 16 and older. In Ohio, approximately 1,600 adults were surveyed, randomly selected to represent the 8.3 million adults in the state. In all, some 26,000 adults were surveyed, representing more than 191 million individuals nationwide. Each respondent was asked to spend about an hour performing diverse literacy tasks and answering questions about his or her background, education, work experiences, and reading practices.

Together, the results of the state and national surveys represent the most comprehensive database ever available on adult literacy in this nation. In an effort to disseminate the results to a wide and diverse audience, the findings are being issued in a series of reports. This report on the Ohio study profiles the literacy skills of state residents and explores connections between literacy and various factors. Reports are also available on each of the other 11 states that participated in the State Adult Literacy Survey.

Readers who seek additional information may wish to read *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey*, or one of the forthcoming reports on literacy and education, literacy in the labor force, literacy among older adults and among prisoners, literacy and culture, and literacy practices.

Our hope is that this report and its companions will be a valuable resource to those who are concerned about literacy in Ohio, and who are addressing the needs that are so plainly revealed in these data.

Lynn B. Jenkins
Irwin S. Kirsch

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Adult Literacy in Ohio

This executive summary presents a portrait of adult literacy in Ohio based on the results of the State Adult Literacy Survey, an important research project in which 12 states assessed the literacy skills of their adult populations. The project, conducted in 1992, is a component of the National Adult Literacy Survey, a large-scale study funded by the U.S. Department of Education and administered by Educational Testing Service.

Many past studies of adult literacy have tried to count the number of "illiterates" in this nation, thereby treating literacy as a condition that individuals either do or do not have. We believe that such efforts are inherently arbitrary and misleading. They are also damaging, in that they fail to acknowledge the complexity, scope, and context of individual literacy needs and the range of actions needed to address them.

The Ohio Adult Literacy Survey, like the National Adult Literacy Survey of which it is a part, is based on a different definition of literacy and therefore follows a different approach to measuring it. The aim of this survey is to characterize adults' literacy skills in English based on their performance on diverse tasks that reflect the types of materials and demands they encounter in their daily lives.

To gather information on the literacy skills of adults in Ohio, trained staff interviewed selected individuals age 16 and older during the first eight months of 1992. These participants were randomly chosen to represent the adult population in the state as a whole. In total, nearly 1,600 adults in Ohio were surveyed, representing approximately 8.3 million adults statewide.

Each survey participant was asked to spend approximately an hour responding to a series of varied literacy tasks as well as questions about his or her demographic characteristics, educational background, employment, income, reading practices, and other areas related to literacy. Based on their responses to the survey tasks, adults received proficiency scores along three scales, each ranging from 0 to 500. The score points along these scales reflect varying degrees of skill in prose, document, and quantitative literacy. To provide a way to examine the distribution of performance within various

subpopulations of interest, five levels of proficiency were defined along each scale: Level 1 (0 to 225), Level 2 (226 to 275), Level 3 (276 to 325), Level 4 (326 to 375), and Level 5 (376 to 500).

The full report offers a comprehensive look at the results of the Ohio survey. It describes the average literacy proficiencies and the levels of proficiency demonstrated by adults surveyed in this state, compared with adults in the region and nation, and explores connections between literacy and an array of variables. Some of the major findings are highlighted in the pages that follow.

Profiles of Adult Literacy in Ohio

- Sixteen to 18 percent of the Ohio survey respondents demonstrated skills in the lowest level of prose, document, and quantitative proficiencies (Level 1). Though all adults in this level displayed limited skills, their characteristics are diverse. Many adults in this level were successful in performing simple, routine tasks involving brief and uncomplicated texts and documents. For example, they were able to total the entries on a deposit slip, locate the time or place of a meeting on a form, and identify a piece of specific information in a brief news article. Others did not perform these types of tasks successfully, however, and some had such limited skills that they were unable to respond to much of the survey.[1]

- The composition of the Level 1 population differs in some important respects from the state population as a whole. For example, 4 percent of the Ohio adults who performed in Level 1 on the quantitative literacy scale were foreign-born, twice the proportion of foreign-born adults in the state. Just 36 percent had completed high school or a General Educational Development certificate (GED) or attended a postsecondary institution, compared with 74 percent across the state. More than 40 percent were age 65 or older, although only 17 percent of the state population is in that age group; 26 to 28 percent have physical or mental conditions that keep them from participating fully in work, school, housework, or other activities, compared with 11 percent of the state population.

- Twenty-seven to 31 percent of the Ohio respondents performed in the next higher level of proficiency (Level 2) on the literacy scales. While their skills were more varied than those of individuals in Level 1, their repertoires were still quite limited. They were generally able to locate information in text, to

[1] The composition of the Level 1 population will be further explored in the technical report on the National and State Adult Literacy Surveys.

make low-level inferences using printed materials, and to integrate easily identifiable pieces of information. Further, they demonstrated the ability to perform quantitative tasks that involve a single operation where the numbers are either stated or can be easily found in text. For example, adults in this level were able to calculate the total cost of a purchase or determine the difference in price between two items. They could also locate a particular intersection on a street map and enter background information on a simple form.

- Individuals in Levels 1 and 2 were sometimes, but not consistently, able to respond correctly to the more challenging literacy tasks in the assessment — those requiring higher-level reading and problem-solving skills. In particular, they appeared to have considerable difficulty with tasks that required them to integrate or synthesize information from complex or lengthy texts or to perform quantitative tasks in which the individual had to set up the problem and then perform two or more sequential operations.

- Approximately one-third of the survey participants in Ohio performed in Level 3 on each literacy scale. Respondents with skills in this level on the prose and document scales integrated information from relatively long or dense text or from documents. Those in Level 3 on the quantitative scale demonstrated an ability to determine the appropriate arithmetic operation based on information contained in the directive, and to identify the quantities needed to perform that operation.

- Seventeen to 19 percent of the respondents in Ohio scored in the fourth level of prose, document, and quantitative literacy, and 2 to 4 percent attained the highest level (Level 5). These adults consistently demonstrated the ability to perform the most challenging tasks in this assessment, many of which involved long and complex documents and text passages.

- The average prose, document, and quantitative proficiencies of Ohio respondents were almost identical to those of adults living in the Midwest region and higher than those of adults nationwide. In all three populations — the state, region, and nation — average scores were either in the high end of the Level 2 range (226 to 275) or the low end of the Level 3 range (276 to 325).

- Older adults were more likely than middle-aged and younger adults to demonstrate limited literacy skills. For example, the average proficiencies of Ohio respondents age 65 and older were 63 to 64 points (or more than one literacy level) below those of adults age 35 to 44.

- Virtually all Ohio adults surveyed (98 percent) were born in the United States or a U.S. territory. As a result, the number of foreign-born respondents in the state was too small to compare the proficiencies of those who had lived in the United States for different numbers of years. Nationwide, however, adults born in the United States or one of its territories displayed higher average proficiencies than those born abroad. Foreign-born adults who had lived in this country for more than a decade outperformed more recent immigrants.

- African American respondents in Ohio were more likely than White respondents to perform in the two lowest literacy levels and less likely to attain the two highest levels. There were too few Latino adults in Ohio to provide reliable estimates of their proficiencies. In the national population, Latino adults had lower average scores than African American adults. When one controls for country of birth, however, a different pattern emerges. Latino adults who were born in the United States or one of its territories have higher average proficiencies than African American adults.

- Ohio respondents who reported having physical or mental conditions that keep them from participating fully in work or other activities were more likely than adults without such conditions to perform in the lowest levels on each literacy scale and less likely to reach the highest levels.

- More than three-quarters of Ohio survey participants reported having lived in the state for more than 20 years, and another 12 percent had been residents for 16 to 20 years. There were no significant differences in performance among adults who had lived in the state for different lengths of time.

- The average prose and document proficiencies of men and women in Ohio did not differ, but men displayed somewhat higher average quantitative proficiencies than women.

Education and Training

- Ohio respondents with relatively few years of education were more likely to display limited literacy skills than those who completed high school or some postsecondary education. In fact, average literacy proficiencies rise steadily across the entire range of education levels.

- Differences in the average years of schooling completed by adults in various subpopulations tend to parallel the observed differences in literacy proficiencies. Older survey participants in Ohio had completed less

schooling, on average, than younger participants, for example. The differences in average years of schooling among the racial/ethnic groups are not statistically significant, however.

- On each literacy scale, the average scores of school dropouts in Ohio who had studied for a GED or high school equivalency certificate were 41 to 43 points higher than those of dropouts who had not studied for the certificate. Forty-one percent of the Ohio respondents who had studied for the GED indicated they had received it, and their average scores were 22 to 36 points higher than those of individuals who had studied for but did not receive a GED. The vast majority of GED program participants in Ohio were between the ages of 25 and 54.

- The 10 percent of Ohio survey participants who were enrolled in school or college at the time of the survey had higher literacy proficiencies, on average, than those who were not enrolled in academic programs. Nationwide, the largest percentage of enrollees (38 percent) stated that their goal was a four-year college degree.

- Eighty-nine percent of the Ohio respondents reported having completed at least some of their precollegiate or collegiate education in the state. Overall, their literacy skills were comparable to those of respondents who were educated somewhere else. The average proficiencies of Ohio adults who had been educated in private schools were not significantly different from those of adults who had been educated in public schools.

- Less than 10 percent of the survey respondents in this state said they were currently or previously enrolled in a course to improve their basic skills. Individuals who had enrolled in such a course had lower average proficiencies on the document and quantitative scales than those who had not.

Employment, Economic Status, and Civic Responsibility

- Employed respondents were less likely than those who were unemployed or out of the labor force to perform in the lowest levels on each literacy scale. Across the scales, between 31 and 38 percent of the employed survey participants in Ohio performed in Levels 1 and 2, in contrast to approximately 60 percent of unemployed participants and roughly two-thirds of those who were out of the labor force.

- Ohio respondents who reported being in professional, technical, or managerial positions in their current or most recent jobs had higher average

literacy scores than those in other types of occupations, including sales or clerical, craft or service, or labor, assembly, fishing, or farming positions.

- On each literacy scale, adults who performed in the higher levels had worked more weeks in the past year, on average, than individuals in the lower levels. Among Ohio respondents, those in the three highest literacy levels reported working an average of 32 to 46 weeks in the past year, compared with only 13 to 15 weeks for those performing in Level 1.

- Across the scales, Ohio survey participants with proficiencies in Level 1 reported median weekly earnings of $197 to $205. In contrast, those in Level 3 earned about $314 to $332, while those in Level 5 earned between $560 and $594. Similarly, the median annual household income reported by survey participants in the highest proficiency levels was far higher than that of participants in the lowest levels.

- Approximately two-thirds of Ohio respondents designated as either poor or near poor demonstrated skills in Levels 1 and 2 on each literacy scale; in contrast, only 34 to 41 percent of the not poor performed in this level. As a result, the average literacy scores of poor and near poor respondents are considerably lower than the scores of adults who were not poor.

- Among Ohio survey participants, voting appears to be related to literacy proficiency. On all three scales, the average literacy proficiencies of respondents who said they had voted in a recent election were higher than those of nonvoters.

Language Use and Literacy Practices

- Almost all Ohio survey respondents (95 percent) reported speaking only English before beginning school. All respondents in the state said they understand (100 percent) and almost all said they speak (99 percent) English well or very well; slightly smaller proportions described themselves as reading (97 percent) and writing (94 percent) English well or very well. On all three literacy scales, Ohio respondents who described themselves as having limited writing skills scored, on average, 50 to 60 points below those who said they write well or very well.

- Virtually all survey respondents in Ohio reported getting some or a lot of information about current events, public affairs, or the government from nonprint media — that is, from television or radio. A smaller percentage (86 percent) said they get much of their information from print media, such as newspapers or magazines. Sixty-eight percent said they get some or a lot

of this type of information from friends or relatives. Those who get some or a lot of information from print media earned higher average scores in the assessment than those who do not.

- More than half the adults surveyed in the state (57 percent) said they read a newspaper every day, while another 33 percent said they do so at least once a week. Seven percent reported reading a newspaper less than once a week, and their average prose, document, and quantitative proficiencies were far lower than those of more regular newspaper readers.

- Nineteen percent of the Ohio respondents said they do not read any magazines in English on a regular basis. Their average literacy scores were considerably lower than the scores of those who read at least one magazine regularly. Seventeen percent of the respondents in Ohio said they had not read any books in English in the past six months, and their scores were considerably lower, on average, than the scores of those who had read at least one book. The types of books read most frequently were reference books, manuals, and fiction.

- Thirty percent of the survey participants in Ohio reported that they never use a library, and another one-third said they do so only once or twice a year. In general, individuals who reported frequent use of the library outperformed less frequent users.

- Virtually all Ohio respondents said they watch some television every day, although 15 percent said they spend no more than an hour on this activity. Thirty-eight percent of the survey respondents in the state reported watching four or more hours of television each day. Individuals who watch the most television had lower average proficiencies than those who watch the least.

- There are large (49 to 79 point) differences in prose proficiency between Ohio respondents who read and write prose frequently, either for their personal use or for their jobs, and those who do not. Similarly, the average document proficiencies of respondents who use reference books, catalogs, or lists at least a few times a week are far (66 to 75 points) higher than the scores of those who never use these materials. Finally, in the dimension of quantitative literacy, adults who said they frequently use mathematics outperformed those who rarely or never do so.

Reflections on the Results

In reflecting on the results of this study, many readers will undoubtedly seek an answer to a fundamental question: Are the outcomes satisfactory? That is, are the distributions of prose, document, and quantitative proficiency observed in this survey adequate to ensure individual opportunities for all adults, to increase worker productivity, or to strengthen America's competitiveness around the world?

Because it is impossible to say precisely what literacy skills are essential for individuals to succeed in this or any other society, the results of the State and National Adult Literacy Surveys provide no firm answers to such questions. As the authors examined the survey data and deliberated on the results with members of the advisory committees, however, several observations and concerns emerged.

Perhaps the most salient finding of this study is that such large percentages of adults nationwide performed in the lowest levels (Levels 1 and 2) of prose, document, and quantitative literacy. In and of itself, this may not indicate a serious problem. After all, the majority of adults who demonstrated limited skills described themselves as reading or writing English well, and relatively few said they get a lot of assistance from others in performing everyday literacy tasks. Perhaps these individuals are able to meet most of the literacy demands they encounter currently at work, at home, and in their communities.

Yet, some argue that lower literacy skills mean a lower quality of life and more limited employment opportunities. As noted in a recent report from the American Society for Training and Development, "The association between skills and opportunity for individual Americans is powerful and growing. . . . Individuals with poor skills do not have much to bargain with; they are condemned to low earnings and limited choices."[2]

The data from this survey appear to support such views. On each of the literacy scales, adults who were unemployed or out of the labor force and who earned low wages tended to demonstrate far more limited skills than those who were employed and who earned high wages. Adults who rarely or never read displayed lower average proficiencies than those who were at least occasional readers. Moreover, the average literacy scores of individuals who received food stamps and who were poor or near poor were much lower than those of their more affluent peers.

[2] A.J. Carnevale and L.J. Gainer. (1989). *The Learning Enterprise*. Washington, D.C.: U.S. Department of Labor, Employment and Training Administration.

Literacy is not the only factor that contributes to how we live our lives, however. Some adults who were out of work or who earned low wages performed relatively well in the assessment, while some full-time workers or adults who earned high wages did relatively poorly. Thus, having advanced literacy skills is not necessarily associated with individual opportunities.

Still, literacy can be thought of as a currency in this society. Just as adults with little money have difficulty meeting their basic needs, those with limited literacy skills are likely to find it more challenging to pursue their goals — whether these involve job advancement, consumer decision making, citizenship, or other aspects of their lives. Even if adults who performed in the lowest literacy levels are not experiencing difficulties at present, they may be at risk as the nation's economy and social fabric continue to change.

Beyond these personal consequences, what implications are there for society when so many individuals display limited skills? The answer to this question is elusive. Still, it seems apparent that a nation in which large numbers of citizens display limited literacy skills has fewer resources with which to meet its goals and objectives, whether these are social, political, civic, or economic.

If large percentages of adults had to do little more than be able to sign their name on a form or locate a single fact in a newspaper or table, then the levels of literacy seen in this survey might not warrant concern. We live in a nation, however, where both the volume and variety of written information are growing and where increasing numbers of citizens are expected to be able to read, understand, and use these materials.

Historians remind us that during the last 200 years, our nation's literacy skills have increased dramatically in response to new requirements and expanded opportunities for social and economic growth. Today we are a better educated and more literate society than at any time in our history.[3] Yet, there have also been periods of imbalance — times when demands seemed to surpass levels of attainment.

In recent years, our society has grown more technologically advanced and the roles of formal institutions have expanded. As this has occurred, many have argued that there is a greater need for all individuals to become more literate and for a larger proportion to develop advanced skills.[4] Growing numbers of individuals are expected to be able to attend to multiple features of information

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[3] L.C. Stedman and C.F. Kaestle. (1991). "Literacy and Reading Performance in the United States from 1880 to the Present," in C.F. Kaestle et al., *Literacy in the United States: Readers and Reading Since 1880*. New Haven, CT: Yale University Press. T. Snyder (ed.). (1993). *120 Years of American Education: A Statistical Portrait*. Washington, DC: National Center for Education Statistics.

[4] U.S. Department of Labor. (1992, April). *Learning a Living: A Blueprint for High Performance*. Washington, DC: The Secretary's Commission on Achieving Necessary Skills (SCANS). R.L. Venezky, C.F. Kaestle, and A. Sum. (1987, January). *The Subtle Danger: Reflections on the Literacy Abilities of America's Young Adults*. Princeton, NJ: Educational Testing Service.

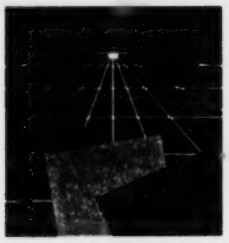
in lengthy and sometimes complex displays, to compare and contrast information, to integrate information from various parts of a text or document, to generate ideas and information based on what they read, and to apply arithmetic operations sequentially to solve a problem.

The results from this and other surveys, however, indicate that many adults do not demonstrate these levels of proficiency. Further, the continuing process of demographic, social, and economic change within this country could lead to a more divided society along both racial and socioeconomic lines.

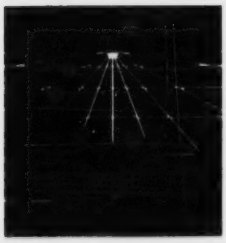
Already there is evidence of a widening division. According to the report *America's Choice: High Skills or Low Wages!*, over the past 15 years the gap in earnings between professionals and clerical workers has grown from 47 to 86 percent while the gap between white collar workers and skilled tradespeople has risen from 2 to 37 percent. At the same time, earnings for college educated males 24 to 34 years of age have increased by 10 percent while earnings for those with high school diplomas have declined by 9 percent. Moreover, the poverty rate for African American families is nearly three times that for White families.[5] One child in five is born into poverty, and for minority populations, this rate approaches one in two.

In 1990, President Bush and the nation's governors, including Governor Clinton, adopted the goal that *all* of America's adults be literate by the year 2000. The responsibility for meeting this objective must, in the end, be shared among individuals, groups, and organizations throughout our society. Programs that serve adult learners cannot be expected to solve the literacy problem alone, and neither can the schools. Other institutions — ranging from the largest and most complex government agency, to large and small businesses, to the family — all have a role to play in ensuring that adults who need or wish to improve their literacy skills have the opportunity to do so. It is also important that individuals themselves come to realize the value of literacy in their lives and to recognize the benefits associated with having better skills. Only then will more adults in this nation develop the literacy resources they need to function in society, to achieve their goals, and to develop their knowledge and potential.

[5] National Center on Education and the Economy. (1990, June). *America's Choice: High Skills or Low Wages! The Report of The Commission on the Skills of the American Workforce.* p. 20.



INTRODUCTION



INTRODUCTION

As a nation, we place a high value on literacy. This was affirmed at the historic education summit in Charlottesville, Virginia, when the nation's governors — including Governor Clinton — met with President Bush to define a set of national education goals that would guide the country into the twenty-first century. As adopted in 1990, the fifth goal states:

> ***By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.***

To gauge our progress toward meeting this ambitious goal, it is necessary first to have accurate and detailed information about our current status. The National Adult Literacy Survey (NALS) and the concurrent State Adult Literacy Survey (SALS) were designed to provide this essential information on the literacy skills of America's adults. The surveys grew out of the Adult Education Amendments of 1988, in which the U.S. Congress called on the Department of Education to report on the definition of literacy and on the nature and extent of literacy among America's adults. In response, the Department's National Center for Education Statistics (NCES) and the Division of Adult Education and Literacy planned a national household survey of adult literacy.

In September 1989, NCES awarded a four-year contract to Educational Testing Service to design and administer the survey and to analyze and report the results. A subcontract was given to Westat, Inc., for sampling and field operations. Over the next few years, an extensive process was undertaken to develop a working definition of literacy for the study, construct survey instruments that would measure adults' proficiencies and gather important background information, analyze the survey data, and report on the results.

While the National Adult Literacy Survey would, by design, provide information on the literacy skills of America's adults nationwide, and on the performance of those living in various regions of the country, it would not

enable individual states to describe the literacy proficiencies of adults living within their borders. Accordingly, each of the 50 states was invited to participate in a concurrent project, the State Adult Literacy Survey, designed to provide state-level results comparable to those of the national survey. Many states expressed an interest, and the following decided to participate in the concurrent study.

California	Louisiana	Pennsylvania
Illinois	New Jersey	Texas
Indiana	New York	Washington
Iowa	Ohio	

To permit comparisons of the state and national results, the survey instruments administered to the state and national samples were virtually identical; the only difference was that the state survey instruments included a small number of additional background questions. Further, the data for the national and state surveys were gathered at the same time. Florida also participated in the survey, but its data collection was unavoidably delayed until 1993.

During the first eight months of 1992, approximately 1,000 adults age 16 to 64 were surveyed in each state that participated in the State Adult Literacy Survey, in addition to the more than 14,000 adults age 16 and older who were surveyed nationwide as part of the National Adult Literacy Survey. In total, then, more than 26,000 individuals across the country participated in the state and national studies. Respondents spent, on average, more than an hour performing a series of diverse literacy tasks and answering a set of background questions on various topics. The results offer the most detailed portrait ever available of adult literacy in the United States.

The remainder of this introduction summarizes the definition of literacy for the national and state surveys, the framework used in designing the survey instruments, the populations assessed, the survey administration, and the methods for reporting the results.

Defining and Measuring Literacy

The plan for developing and conducting the national and state surveys was guided by a panel of experts from business and industry, labor, government, research, and adult education. This Literacy Definition Committee worked with Educational Testing Service staff to prepare a definition of literacy that would guide the development of the assessment objectives as well as the

construction and selection of assessment tasks. A second panel, the Technical Review Committee, was formed to help ensure the soundness of the assessment design, the quality of the data collected, the integrity of the analyses conducted, and the appropriateness of the interpretations of the final results. In addition, representatives from each of the states that participated in the State Adult Literacy Survey were invited to attend a series of meetings convened to guide the collection, analysis, and interpretation of data from the state surveys. These representatives were kept informed about the status of the survey through a series of newsletters prepared by Educational Testing Service staff.

The definition of literacy that guided the National Adult Literacy Survey and State Adult Literacy Survey was rooted in two preceding literacy studies funded by the federal government and conducted by Educational Testing Service: a 1985 household survey of the literacy skills of 21- to 25-year-olds, funded by the U.S. Department of Education,[1] and a 1989-90 survey of the literacy proficiencies of job seekers, funded by the U.S. Department of Labor.[2] The national panel of experts assembled to construct a definition of literacy for the young adult survey rejected the types of arbitrary standards — such as signing one's name, completing five years of school, or scoring at a particular grade level on a school-based measure of reading achievement — that have long been used to make judgments about adults' literacy skills. Through a consensus process, this panel drafted the following definition of literacy for the young adult survey:

> ***Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.***

Unlike traditional definitions of literacy, which focused on decoding and comprehension, this definition encompasses a broad range of skills that adults use in accomplishing the many different types of literacy tasks associated with work, home, and community contexts. This perspective is shaping not only adult literacy assessment, but also policy, as seen in the National Literacy Act of 1991, which defined literacy as "an individual's ability to read, write, and speak in English and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals, and to develop one's knowledge and potential."

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[1] I.S. Kirsch and A. Jungeblut. (1986). *Literacy: Profiles of America's Young Adults*. Princeton, NJ: Educational Testing Service.

[2] I.S. Kirsch, A. Jungeblut, and A. Campbell. (1992). *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*. Princeton, NJ: Educational Testing Service.

The definition of literacy from the young adult survey was adopted by the panel that guided the development of the 1989-90 survey of job seekers, and it also provided the starting point for the discussions of the National Adult Literacy Survey's Literacy Definition Committee. This committee agreed that expressing the literacy proficiencies of adults in school-based terms or grade-level scores is inappropriate. In addition, while the committee recognized the importance of teamwork skills, interpersonal skills, and communication skills for functioning in various contexts, such as the work place, it decided that these areas would not be addressed in this survey.

Further, the committee endorsed the notion that literacy is neither a single skill suited to all types of texts, nor an infinite number of skills, each associated with a given type of text or material. Rather, as suggested by the results of the young adult and job-seeker surveys, an ordered set of skills appears to be called into play to accomplish diverse types of tasks. Given this perspective, the Literacy Definition Committee agreed to adopt not only the definition of literacy that was used in the previous surveys, but also the three scales developed as part of those efforts:

Prose literacy — the knowledge and skills needed to understand and use information from texts that include editorials, news stories, poems, and fiction; for example, finding a piece of information in a newspaper article, interpreting instructions from a warranty, inferring a theme from a poem, or contrasting views expressed in editorials.

Document literacy — the knowledge and skills required to locate and use information contained in materials that include job applications, payroll forms, transportation schedules, maps, tables, and graphs; for example, locating a particular intersection on a street map, using a schedule to choose the appropriate bus, or entering information on an application form.

Quantitative literacy — the knowledge and skills required to apply arithmetic operations, either alone or sequentially, using numbers embedded in printed materials; for example, balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest from a loan advertisement.

The literacy scales, built initially to report on the results of the young adult survey and augmented in the survey of job seekers, provide a useful way to organize a broad array of tasks and to report the assessment results. They represent a substantial improvement over traditional approaches to literacy assessment, which have tended to report on performance in terms of single

tasks or to combine the results from diverse tasks into a single, conglomerate score. Such a score fosters the simplistic notion that "literates" and "illiterates" can be neatly distinguished from one another based on a single cutpoint on a single scale. The literacy scales, on the other hand, make it possible to profile the various types and levels of literacy among different subgroups in our society. In so doing, they help us to understand the diverse information-processing skills associated with the broad range of printed and written materials that adults read and their many purposes for reading them.

In adopting the three scales for use in this survey, the committee's aim was not to establish a single national standard for literacy. Rather, it was to provide an interpretive scheme that would enable levels of prose, document, and quantitative performance to be identified and allow descriptions of the knowledge and skills associated with each level to be developed.

The Literacy Definition Committee for the National Adult Literacy Survey recommended that a new set of literacy tasks be developed to enhance the literacy scales for this survey, without compromising the ability to compare the results with those of the young adult and job-seeker surveys. The new tasks, like those administered in the earlier studies, were open-ended. They simulated real-life literacy demands, measured a broad range of information-processing skills, and covered a wide variety of contexts. There was a greater emphasis on tasks that required brief written and/or oral responses and that asked respondents to describe how they would set up and solve a problem. Finally, some of the new quantitative tasks developed for this survey required respondents to use a simple, four-function calculator.

In all, approximately 110 new assessment tasks were field tested, and 81 of these were selected for inclusion in the survey, in addition to 85 tasks that were administered in both the young adult and job-seeker assessments. The administration of a common set of simulation tasks in each of the three literacy surveys makes it possible to compare results across time (that is, from the 1985, 1989-90, and 1992 surveys) and across population groups.

A large number of tasks had to be administered in the current survey to ensure the broadest possible coverage of the literacy domains specified. Yet, no individual could be expected to respond to the entire set of 166 simulation tasks. Accordingly, the survey design dictated that each respondent would receive a subset of the total pool of literacy tasks, while at the same time ensuring that each task was administered to a nationally representative sample of adults. The literacy tasks were assigned to sections that could be completed in about 15 minutes, and these sections were then compiled into booklets, each of which could be completed in about 45 minutes. During a personal interview, each survey respondent was asked to complete one booklet of assessment tasks.

All tasks were administered in English only, since this was a survey of adults' literacy skills in the English language — not of their proficiencies in other languages.

In addition to performing the literacy tasks, each participant was asked to spend approximately 20 minutes answering a series of questions about his or her background and characteristics. Two versions of this questionnaire were administered, one in English and one in Spanish. Major areas explored included:

- *background and demographics* — country of birth, languages spoken or read, access to reading materials, size of household, educational attainment of parents, age, race/ethnicity, and marital status
- *education* — highest grade completed in school, current aspirations, participation in adult education classes, and education received outside the country
- *labor market experiences* — employment status, recent labor market experiences, and occupation
- *income* — personal as well as household
- *activities* — voting, hours spent watching television, frequency and content of newspaper reading, and use of literacy skills for work and leisure

This core set of background questions was administered to all adults in the state and national samples. However, each state that participated in the State Adult Literacy Survey was invited to develop up to five additional background questions that would be administered to its respondents, to gather information of particular interest to state decision makers. The supplementary background questions included in the Ohio survey addressed a range of topics:

- length of residency in the state
- primary reason for moving to the state
- receipt of GED either in state or out of state
- levels of schooling completed in the state
- type of school where high school diploma was received, whether in state or out of state

These background data make it possible to investigate the extent to which particular characteristics, experiences, and behaviors are associated with demonstrated performance on each of the three literacy scales.[3]

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[3] A more detailed description of the survey design and framework can be found in: A. Campbell, I.S. Kirsch, and A. Kolstad. (1992, October). *Assessing Literacy: The Framework for the National Adult Literacy Survey*. Washington, DC: National Center for Education Statistics.

Conducting the Survey

It was important to administer the State and National Adult Literacy Surveys at the same time to ensure that the results would be comparable. Accordingly, the surveys were carried out during the first eight months of 1992, except in Florida, where the data collection was unavoidably delayed until 1993. The survey instruments were administered through in-person interviews conducted by more than 400 trained staff, some of whom were bilingual in English and Spanish. Survey participants who completed as much of the assessment as their skills allowed were paid $20 for their time.

In the national survey, data were gathered for a nationally random sample of adults age 16 and older who were living in households. African American and Latino households were oversampled to ensure reliable estimates of literacy proficiencies and to permit analyses of the performance of these subpopulations. In addition to the household population, a random sample of adults in federal and state prisons was surveyed. In the state surveys, a random household sample of adults age 16 to 64 was interviewed in each participating state.

Responses from the national, state, and prison samples were combined to yield the best possible performance estimates. The results of the Florida state survey could not be included in the national estimates, however, due to the delayed administration.

In all, over 26,000 adults across the nation — randomly selected to represent the approximately 191.3 million adults living in this country — gave more than an hour of their time to complete the literacy tasks and background questionnaires. The national sample included almost 13,600 adults living in households and approximately 1,100 prisoners, as well as state samples of more than 11,300 adults living in households (Table 1). In the Midwest as a whole, 7,494 adults were surveyed, representing some 45.3 million adults in the region, including those living in households and those in prison. A total of 1,568 individuals living in Ohio participated in the study, representing approximately 8.3 million individuals statewide who were living in households. (See Appendix B for information on the sampling procedures used in this survey.)

The Ohio, Midwest, and United States populations are similar in terms of the proportions of men (47 percent) and women (52 percent). The racial/ethnic compositions of these samples vary, however. For example, 88 percent of the adults in Ohio are White, 10 percent are African American, 2 percent are Latino, and less than 1 percent are Asian/Pacific Islander. In the Midwest, 85 percent of the population is White, 9 percent is African American, 4 percent is Latino, and 1 percent is Asian/Pacific Islander. Nationwide, 76 percent of adults are White, 11 percent are African American, 10 percent are Latino, and

2 percent are Asian/Pacific Islander. Readers should remember these differences in the composition of the state, regional, and national populations as they interpret the literacy proficiency results discussed in this report.

OHIO TABLE 1

Characteristics of the Ohio, Midwest, and National Samples

	Ohio Sample			Midwest Sample			National Sample		
	Survey pop.	Total pop.*	% of pop.	Survey pop	Total pop.*	% of pop.	Survey pop.	Total pop.*	% of pop.
Total	1,568	8,261	100	7,494	45,318	100	26,091	191,289	100
Sex									
Male	633	3,910	47	3,331	21,621	48	11,770	92,098	48
Female	931	4,334	53	4,152	23,645	52	14,279	98,901	52
Age									
16 to 18	79	438	5	366	2,637	6	1,237	10,424	5
19 to 24	203	1,015	12	928	5,041	11	3,344	24,515	13
25 to 34	395	1,761	21	1,895	9,424	21	6,701	41,326	22
35 to 44	350	1,643	20	1,716	9,230	20	5,930	39,755	21
45 to 54	267	1,220	15	1,123	6,102	13	3,729	25,992	14
55 to 64	176	779	9	890	4,656	10	2,924	19,503	10
65 and older	98	1,405	17	574	8,226	18	2,214	29,735	16
Race/Ethnicity									
White	1,245	7,291	88	5,877	38,530	85	17,292	144,968	76
African American	289	812	10	1,161	4,222	9	4,963	21,192	11
Latino (all)	30	141	2	346	1,703	4	3,126	18,481	10
Mexican	10	63	1	213	1,058	2	1,776	10,235	5
Puerto Rican	13	42	1	70	222	0	405	2,190	1
Cuban	0	0	0	4	26	0	147	928	0
C./S. American	2	8	0	34	205	0	424	2,608	1
Other	5	28	0	25	193	0	374	2,520	1
Asian/Pacific Islander	1	4	0	49	282	1	438	4,116	2
Other	3	13	0	61	581	1	272	2,532	1

*Total population figures are in thousands.

Notes: The state sample includes only adults living in households. The regional and national samples include adults living in households and those in prison. The sample sizes for subpopulations may not add up to the total sample sizes due to missing data. Percentages below .5 are rounded to 0. The race/ethnicity categories are mutually exclusive. Some estimates for small subgroups of the national, regional, and state population may be slightly different from 1990 Census estimates due to the sampling procedures used. The state sample of adults age 65 and older may not be representative (see Appendix for more information).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Reporting the Results

The results of the State Adult Literacy Survey are reported using three scales, each ranging from 0 to 500: a prose scale, a document scale, and a quantitative scale. The scores on each scale represent degrees of proficiency along that particular dimension of literacy. For example, a low score (below 225) on the document scale indicates that an individual demonstrates very limited skills in processing information from tables, charts, graphs, maps, and the like, even those that are brief and uncomplicated. He or she may be able to perform more challenging literacy tasks some of the time — for example, when the material is familiar — but would not be expected to do so with a high degree of consistency. On the other hand, a high score (above 375) indicates that a person displays advanced skills in performing a variety of tasks that involve the use of complex documents. He or she would be expected to process information from challenging materials with a high degree of consistency.

Survey participants obtained proficiency scores according to their performance on the survey tasks. A relatively small proportion of the respondents answered only a part of the survey, and an imputation procedure was used to make the best possible estimates of their proficiencies. This procedure and related issues are detailed in the forthcoming technical report.

Most respondents tended to obtain similar scores on the three literacy scales, but this does not mean that the underlying skills involved in prose, document, and quantitative literacy are the same. Each scale provides some unique information, especially when comparisons are made across groups defined by variables such as race/ethnicity, education, and age.

The literacy scales allow us not only to summarize results for various subpopulations, but also to determine the relative difficulty of the literacy tasks included in the survey. In other words, just as individuals earned scale scores according to their performance in the assessment, the literacy tasks received scale values according to their difficulty, as determined by the performance of the nationally representative sample of adults who participated in the survey. Previous research has shown that the difficulty of a literacy task, and therefore its placement on the literacy scale, is determined by three factors: the structure of the material — for example, exposition, narrative, table, graph, map, or advertisement; the content of the material and/or the context from which it is drawn — for example, home, work, or community; and the nature of the task — that is, what the individual is asked to do with the material, or his or her purpose for using it.

The literacy tasks administered in the survey varied widely in terms of materials, content, and task requirements, and thus in terms of difficulty. This range is captured in Figure 1, which describes some of the literacy tasks and

Figure 1

Difficulty Values of Selected Tasks Along the Prose, Document, and Quantitative Literacy Scales

Prose		Document		Quantitative	
149	Identify country in short article	69	Sign your name	191	Total a bank deposit entry
210	Locate one piece of information in sports article	170	Locate expiration date on driver's license		
224	Underline sentence explaining action stated in short article	180	Locate time of meeting on a form		
		214	Using pie graph, locate type of vehicle having specific sales		
226	Underline meaning of a term given in government brochure on supplemental security income	230	Locate intersection on a street map	238	Calculate postage and fees for certified mail
250	Locate two features of information in sports article	246	Locate eligibility from table of employee benefits	246	Determine difference in price between tickets for two shows
275	Interpret instructions from an appliance warranty	259	Identify and enter background information on application for social security card	270	Calculate total costs of purchase from an order form
288	Write a brief letter explaining error made on a credit card bill	277	Identify information from bar graph depicting source of energy and year	278	Using calculator, calculate difference between regular and sale price from an advertisement
304	Read a news article and identify a sentence that provides interpretation of a situation	298	Use sign out sheet to respond to call about resident	308	Using calculator, determine the discount from an oil bill if paid within 10 days
316	Read lengthy article to identify two behaviors that meet a stated condition	314	Use bus schedule to determine appropriate bus for given set of conditions	321	Calculate miles per gallon using information given on mileage record chart
		323	Enter information given into an automobile maintenance record form	325	Plan travel arrangements for meeting using flight schedule
328	State in writing an argument made in lengthy newspaper article	342	Identify the correct percentage meeting specified conditions from a table of such information	331	Determine correct change using information in a menu
347	Explain difference between two types of employee benefits	352	Use bus schedule to determine appropriate bus for given set of conditions	350	Using information stated in news article, calculate amount of money that should go to raising a child
359	Contrast views expressed in two editorials on technologies available to make fuel-efficient cars	352	Use table of information to determine pattern in oil exports across years	368	Using eligibility pamphlet, calculate the yearly amount a couple would receive for basic supplemental security income
362	Generate unfamiliar theme from short poems				
374	Compare two metaphors used in poem				
382	Compare approaches stated in narrative on growing up	378	Use information in table to complete a graph including labeling axes	382	Determine shipping and total costs on an order form for items in a catalog
410	Summarize two ways lawyers may challenge prospective jurors	387	Use table comparing credit cards. Identify the two categories used and write two differences between them	405	Using information in news article, calculate difference in times for completing a race
423	Interpret a brief phrase from a lengthy news article	395	Using a table depicting information about parental involvement in school survey to write a paragraph summarizing extent to which parents and teachers agree	421	Using calculator, determine the total cost of carpet to cover a room

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

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indicates their scale values. Even a cursory review of this display reveals that tasks at the lower end of each scale differ from ones at the high end. A careful analysis of the range of tasks along each scale reveals an ordered set of information-processing skills and strategies. On the prose scale, for example, tasks with low scale values ask readers to locate or identify information in brief, familiar, or uncomplicated materials, while those at the high end ask them to perform more demanding activities using materials that tend to be lengthy, unfamiliar, or complex. Similarly, on the document and quantitative scales, the tasks at the low end of the scale differ from those at the high end in terms of the structure of the material, the content and context of the material, and the nature of the directive.

In an attempt to capture this progression of information-processing skills and strategies, each scale was divided into five levels:

	Scale range
Level 1	0 to 225
Level 2	226 to 275
Level 3	276 to 325
Level 4	326 to 375
Level 5	376 to 500

The points and score ranges that separate the levels on each scale reflect shifts in the literacy skills and strategies required to perform increasingly complex tasks. Analyses of the types of materials and demands that characterize each level reveal the progression of literacy demands along each scale (Figure 2).

While the literacy levels on each scale can be used to explore the range of literacy demands, these data do not reveal the types of literacy demands that are associated with particular contexts in this pluralistic society. That is, they do not enable us to say what specific level of prose, document, or quantitative skill is required to obtain or hold a job or to advance in a particular occupation, to manage a household, or to obtain legal or community services, for example. Nevertheless, the relationships among performance on the three scales and various social or economic indicators can provide valuable insights.

A Note on Interpretations

The study design and scientific procedures employed in this survey permit a high degree of confidence in the resulting estimates of task difficulty and assure that participants' responses can be generalized to the populations of interest. Readers of this report should bear in mind, however, that the literacy tasks contained in the assessment and the adults invited to participate in the

Description of the Prose, Document, and Quantitative Literacy Levels

	Prose	Document	Quantitative
Level 1	Most of the tasks in this level require the reader to read relatively short text to locate a single piece of information which is identical to or synonymous with the information given in the question or directive. If plausible but incorrect information is present in the text, it tends not to be located near the correct information.	Tasks in this level tend to require the reader either to locate a piece of information based on a literal match or to enter information from personal knowledge onto a document. Little, if any, distracting information is present.	Tasks in this level require readers to perform single, relatively simple arithmetic operations, such as addition. The numbers to be used are provided and the arithmetic operation to be performed is specified.
Level 2	Some tasks in this level require readers to locate a single piece of information in the text; however, several distractors or plausible but incorrect pieces of information may be present, or low-level inferences may be required. Other tasks require the reader to integrate two or more pieces of information or to compare and contrast easily identifiable information based on a criterion provided in the question or directive.	Tasks in this level are more varied than those in Level 1. Some require the readers to match a single piece of information; however, several distractors may be present, or the match may require low-level inferences. Tasks in this level may also ask the reader to cycle through information in a document or to integrate information from various parts of a document.	Tasks in this level typically require readers to perform a single operation using numbers that are either stated in the task or easily located in the material. The operation to be performed may be stated in the question or easily determined from the format of the material (for example, an order form).
Level 3	Tasks in this level tend to require readers to make literal or synonymous matches between the text and information given in the task, or to make matches that require low-level inferences. Other tasks ask readers to integrate information from dense or lengthy text that contains no organizational aids such as headings. Readers may also be asked to generate a response based on information that can be easily identified in the text. Distracting information is present, but is not located near the correct information.	Some tasks in this level require the reader to integrate multiple pieces of information from one or more documents. Others ask readers to cycle through rather complex tables or graphs which contain information that is irrelevant or inappropriate to the task.	In tasks in this level, two or more numbers are typically needed to solve the problem, and these must be found in the material. The operation(s) needed can be determined from the arithmetic relation terms used in the question or directive.
Level 4	These tasks require readers to perform multiple-feature matches and to integrate or synthesize information from complex or lengthy passages. More complex inferences are needed to perform successfully. Conditional information is frequently present in tasks at this level and must be taken into consideration by the reader.	Tasks in this level, like those at the previous levels, ask readers to perform multiple-feature matches, cycle through documents, and integrate information; however, they require a greater degree of inferencing. Many of these tasks require readers to provide numerous responses but do not designate how many responses are needed. Conditional information is also present in the document tasks at this level and must be taken into account by the reader.	These tasks tend to require readers to perform two or more sequential operations or a single operation in which the quantities are found in different types of displays, or the operations must be inferred from semantic information given or drawn from prior knowledge.
Level 5	Some tasks in this level require the reader to search for information in dense text which contains a number of plausible distractors. Others ask readers to make high-level inferences or use specialized background knowledge. Some tasks ask readers to contrast complex information.	Tasks in this level require the reader to search through complex displays that contain multiple distractors, to make high-level text-based inferences, and to use specialized knowledge.	These tasks require readers to perform multiple operations sequentially. They must disembed the features of the problem from text or rely on background knowledge to determine the quantities or operations needed.

Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

survey are samples drawn from their two respective universes. The results are, accordingly, subject to a measurable degree of uncertainty, which is captured in the standard error enclosed in parentheses after each number presented in the tables.

In situations where there are too few respondents in a group to provide reliable information — specifically, when there are fewer than 45 respondents — no data are provided. Instead, the relevant cells in the table are denoted with asterisks.

Using confidence intervals based on the standard errors provides a way to make inferences about the survey results in a manner that reflects the uncertainty inherent in any sample estimate. An average proficiency score, or a percentage, plus or minus two standard errors represents a 95 percent confidence interval for the corresponding population quantity. For example, if unemployed survey participants in Ohio have an average prose score of 265, with a standard error of 7.9, one can conclude with 95 percent certainty that the average prose score of all unemployed adults in Ohio is between 249.2 and 280.8, since $7.9 \times 2 = 15.8$, and $265 \pm 15.8 = 249.2$ to 280.8.

Where this report compares the demonstrated literacy skills of various groups, only those differences that are statistically significant are discussed. Each comparison is based on a statistical test, known as the t statistic, which considers not only the magnitude of the differences between any two groups (for example, the gap in average document proficiency between high school and college graduates), but also the size of the standard errors associated with the numbers being compared and the number of comparisons being made.

The formula used to compute the t statistic is as follows:

$$t = (P_1 - P_2)/\sqrt{(se_1^2 + se_2^2)},$$

where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. Once the t statistic is known, it is necessary to determine whether this value meets the standard for statistical significance. Generally, when two groups are being compared, determinations of statistical significance are made at the .05 level, indicating that there is only a 5 percent chance that the observed difference is not, in fact, a true difference but is instead due to variability in the population estimates. When multiple comparisons are made using the same data, however, the likelihood of finding a spurious difference increases. To guard against such errors of inference, the Bonferroni procedure is used to correct significance tests for multiple comparisons. This procedure divides the alpha level for a single t test (.05) by the number of comparisons being made.

An example may be helpful. Say that one wanted to compare the average document proficiencies of adults in Ohio age 16 to 18 (282 with a standard

error of 5.9) and those age 19 to 24 (296 with a standard error of 4.2). The difference in average scores between the two groups ($P_1 - P_2$) is 14, and the standard error associated with the difference ($\sqrt{se_1^2 + se_2^2}$) is 7.24, so the t statistic for this comparison is 1.934.

Since the age variable has seven categories (16 to 18, 19 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65 and older), the total number of comparisons that could be made using this variable is 21 (see Table 1.3P). In actuality, however, we are interested only in comparing one age group with the next higher one. Thus, the number of comparisons being made is six, rather than 21. Using a published table of critical values that adjusts for multiple comparisons, we find that the statistical significance "threshold" for six comparisons is 2.639. The t statistic for our comparison (1.934) is below this threshold, so the difference in average document scores between the 16 to 18 and 19 to 24 age groups is not considered statistically significant. In comparing various groups, readers are advised to rely on statistical tests of this nature, rather than use the numbers alone.

It is important to recognize that even when differences are found between various groups, the nature of the survey makes it impossible to determine the direction of these relationships. In other words, it is impossible to identify the extent to which literacy shapes particular aspects of our lives or is, in turn, shaped by them. For example, there is a strong relationship between educational attainment and literacy proficiencies. On the one hand, it is likely that staying in school longer strengthens an individual's literacy skills. On the other hand, those with more advanced skills tend to remain in school longer. Other variables, as well, are likely to play a role in the relationship between literacy and education.

Finally, when comparing the literacy skills of different groups, the range of performance within each group must be kept in mind. While this report describes the literacy proficiencies of subpopulations defined by variables such as age, sex, race, ethnicity, and educational background, clearly the individuals within these groups are not homogeneous with respect to either their characteristics or their proficiencies. Within every group there are some individuals who perform well and some who perform poorly. Accordingly, when one group is said to have lower average scores than another, this does not imply that all adults in the first group performed worse than all those in the second. Such statements are only intended to highlight general patterns of differences among various groups and do not capture the variability within each group.

Above all, the survey results show us that no single factor determines what an individual's literacy proficiencies will be. All of us develop our own unique repertoire of competencies depending on a wide array of conditions and

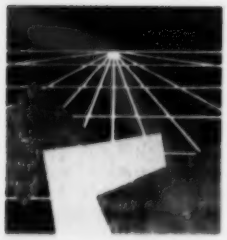
circumstances, including our family backgrounds, educational attainments, interests and aspirations, economic resources, and employment experiences. Any single survey, this one included, can focus on only some of these variables.

About This Report

This report contains five sections. The first, Section I, presents information on the literacy levels and average proficiencies of adults in Ohio, the Midwest, and the nation as a whole. In addition, the performance of different subpopulations is compared — adults in different age groups, the native-born and the foreign-born, and those in different racial/ethnic groups, for example. The remaining sections focus primarily on the Ohio results, although regional and national comparisons are discussed where interesting patterns and differences are evident. Section II provides information on the connection between literacy and education. Section III focuses on the relationships between adults' work and community experiences and their literacy skills. Section IV explores literacy and its association with language use, instruction, and reading and writing practices.

Each of these sections begins with a written summary of the findings, followed by a series of tables that present detailed information. The summaries provide only a general sketch of the data contained in tables, and readers are encouraged to explore the data further to pursue answers to other questions of interest.

The last part of the report, Section V, profiles the literacy levels on each scale, provides examples of the types of tasks that were likely to be performed successfully by individuals who performed in each proficiency level, and analyzes the knowledge and skills reflected in these tasks. The appendices at the end of the report contain technical information about the variables reported herein and about the survey methods.



SECTION I

SECTION I

Profiles of Adult Literacy in Ohio

The State Adult Literacy Survey, like the National Adult Literacy Survey to which it is linked, collected information on multiple dimensions of adult literacy. This section of the report profiles the prose, document, and quantitative skills of adults in Ohio and compares their performance with that of adults in the Midwest region and the nation as a whole. Performance results are also examined for groups defined by age, country of birth, race/ethnicity, and other characteristics.[1]

As described in the Introduction, the results of the National and State Adult Literacy Surveys are reported using three literacy scales — prose, document, and quantitative — each ranging from 0 to 500. In this chapter and throughout the report, these scales are used in two ways to report on adults' literacy skills. Each offers a somewhat different perspective on performance.

Average scores, or "proficiencies," on each scale offer a way to describe literacy skills in general terms. This approach is used, for example, to indicate whether adults in one population group tend to perform better or worse than those in another group. This information is useful, but it reveals little about the distribution of skills within a population or about the types of tasks that can be performed by individuals with varying levels of proficiency. To address these types of questions, it is helpful to examine the percentages of adults in different populations who performed in each of the five levels defined on the prose, document, and quantitative scales: Level 1 (0 to 225), Level 2 (226 to 275), Level 3 (276 to 325), Level 4 (326 to 375), and Level 5 (376 to 500).[2] Using the literacy levels, it is possible to indicate whether the individuals in one group were more likely than those in another group to demonstrate skills in the lowest, or the highest, levels on each literacy scale.

In considering the literacy levels, it is important to remember that each level encompasses a range of performance. As a result, the tasks in any given

[1] All subpopulations and variables discussed in this report are defined in the appendices.

[2] An overview of the literacy levels is provided in the Introduction. Section V describes the levels in more detail and includes examples of the types of tasks that were likely to be performed successfully by individuals in each level.

level are not all of the same difficulty; neither are the individuals who demonstrated skills in that level identical in literacy proficiency. Tasks in the high end of the range for a given level are more challenging than those in the low end; individuals whose proficiencies are in the high end of a level demonstrated success on a more challenging set of literacy tasks than individuals in the low end. The performance of adults in Level 1 is especially heterogeneous, as this level includes individuals who successfully performed only the least demanding literacy tasks in the survey, those who attempted to perform these tasks but seldom succeeded, and those who had such limited skills (or such limited English proficiency) that they did not try to respond to any of the assessment tasks. Thus, while the literacy levels are discussed as distinct units in this section and other parts of the report, the range of performance within each level should be kept in mind.

Results for the Total Population in Ohio, the Midwest, and the Nation

Adults in Ohio had average proficiency scores of 280 on the prose scale, 276 on the document scale, and 280 on the quantitative scale. These average proficiencies are almost identical to those of adults living in the Midwest and are higher than those of adults nationwide (Figure 1.1, Table 1.1). In the state, region, and nation, average scores on each literacy scale were in either the high end of the Level 2 range (226 to 275) or the low end of the Level 3 range (276 to 325). The percentages of adults who demonstrated skills in each level of prose, document, and quantitative proficiency are presented in the pages that follow.

Level 1

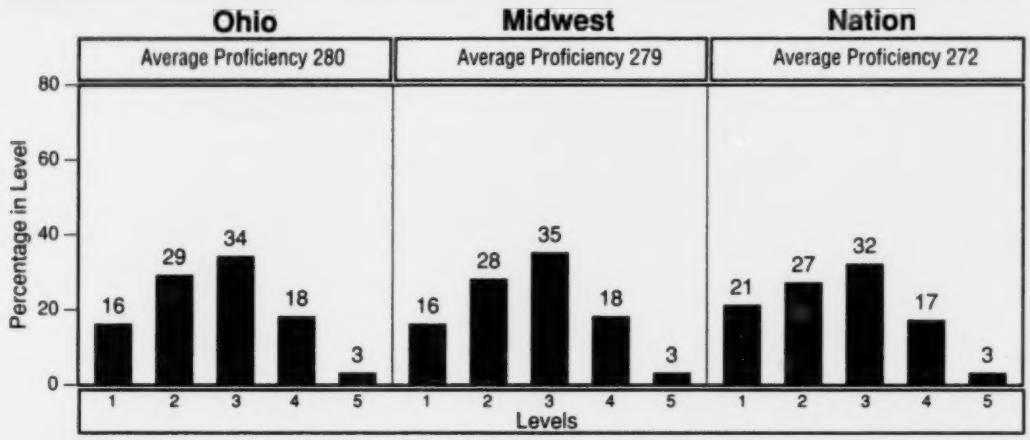
Sixteen percent of the adults in Ohio performed in the lowest level defined on the prose scale, while 18 percent were in the lowest level on the document scale, and 17 percent were in Level 1 on the quantitative scale. In population terms, approximately 1.3 to 1.5 million adults living in the state are estimated to have proficiencies within the range for the lowest literacy level.

In the Midwest, 16 to 19 percent of the population performed in Level 1 on each scale. In comparison, 21 to 23 percent of adults nationwide performed in this level on each literacy scale. Thus, the percentages of Ohio adults who demonstrated the most limited proficiencies were comparable to the percentages of adults regionally who did so, and lower than the percentages of adults nationwide who did so.

OHIO FIGURE 1.1

Prose, Document, and Quantitative Literacy Levels and Average Proficiencies: Results for Ohio, the Midwest, and the Nation

PROSE



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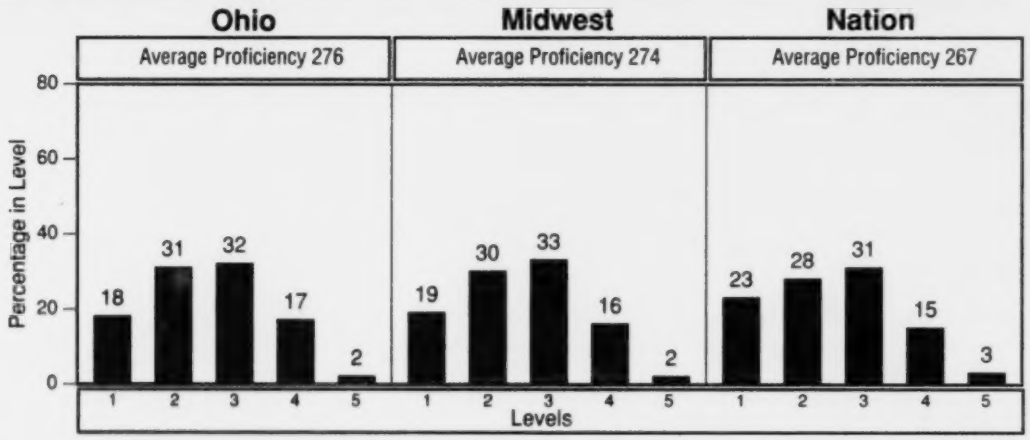

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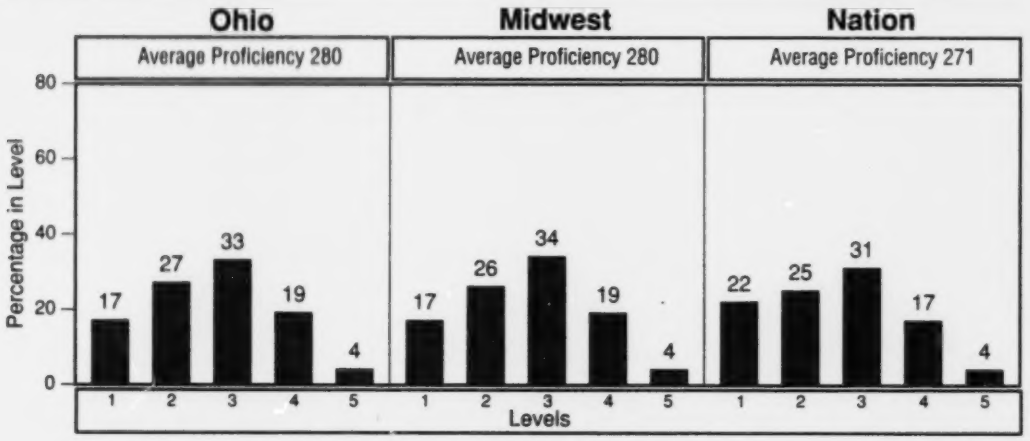

Level 1 (0 to 225) **Level 2** (226 to 275) **Level 3** (276 to 325) **Level 4** (326 to 375) **Level 5** (376 to 500)

Source: Educational Testing Service, State Adult Literacy Survey, and the U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

OHIO TABLE 1.1

Prose, Document, and Quantitative Literacy Levels and Average Proficiencies: Results for Ohio, the Midwest, and the Nation

			Percentage of adults in each literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
Ohio	1,568	8,261	16 (1.4)	29 (1.5)	34 (1.9)	18 (1.5)	3 (0.5)	280 (2.3)
Midwest	7,494	45,318	16 (0.8)	28 (1.0)	35 (1.2)	18 (0.7)	3 (0.3)	279 (1.1)
Nation	26,091	191,289	21 (0.4)	27 (0.6)	32 (0.7)	17 (0.4)	3 (0.2)	272 (0.6)
Document								
Ohio	1,568	8,261	18 (1.7)	31 (2.0)	32 (1.4)	17 (1.8)	2 (0.6)	276 (2.4)
Midwest	7,494	45,318	19 (0.8)	30 (1.1)	33 (1.3)	16 (0.9)	2 (0.3)	274 (1.3)
Nation	26,091	191,289	23 (0.4)	28 (0.5)	31 (0.5)	15 (0.4)	3 (0.2)	267 (0.7)
Quantitative								
Ohio	1,568	8,261	17 (1.8)	27 (2.1)	33 (2.1)	19 (1.1)	4 (0.8)	280 (2.7)
Midwest	7,494	45,318	17 (1.0)	26 (1.5)	34 (1.4)	19 (0.9)	4 (0.3)	280 (1.7)
Nation	26,091	191,289	22 (0.5)	25 (0.6)	31 (0.6)	17 (0.3)	4 (0.2)	271 (0.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

As noted previously, the individuals who performed within the Level 1 range were varied with respect to their characteristics as well as their skills. Some in this literacy level displayed the ability to read relatively short pieces of text to find a single piece of information. Some were able to enter personal information on an application form, or to locate the time of an event on a schedule. Some were able to add numbers provided on a bank deposit slip, or to perform other simple arithmetic operations using numbers presented to them. Others in Level 1, however, were unable to perform even these fairly common and undemanding literacy tasks. Within this group there were individuals who had such limited literacy skills in English that they were able to complete only a portion of the survey, and others who tried to perform the literacy tasks they were given but were largely unsuccessful.[3]

[3] The composition of the Level 1 population will be further explored in the technical report on the National and State Adult Literacy Surveys.

Since individuals who performed in the lowest literacy level displayed relatively limited skills, it is important to study their characteristics and compare these with the features of the adult population as a whole (Table 1.2P,D,Q).[4] Such an analysis reveals that 4 percent of the Ohio residents whose prose skills were in the Level 1 range were born outside the United States — twice the proportion of foreign-born adults in the entire state population (2 percent). African Americans are also disproportionately represented in Level 1. While they comprise 10 percent of Ohio residents, they represent 17 percent of the adults in the lowest prose level.

The educational attainments of adults in Level 1 also differ from those of adults in the state population as a whole. On the quantitative scale, for example, Ohio residents with zero to eight years of education were much more prevalent in the Level 1 population (21 percent) than in the statewide population (6 percent). Similarly, about 15 percent of the statewide population reported having nine to 12 years of education, compared with 37 percent of Ohio residents who performed in the lowest level of quantitative literacy. Individuals in Level 1 were much less likely (36 percent) than those in the state population as a whole (74 percent) to have completed high school or a GED or to have attended a postsecondary institution.

Ohio residents who performed in the lowest literacy level were also more likely to be older or disabled than were adults statewide. While 17 percent of the state's residents were age 65 or older, more than twice as many individuals in Level 1 were in this age group. Further, only about 11 percent of Ohio residents said they have a disability or condition that keeps them from participating fully in everyday activities, compared with 26 to 28 percent of the adults who performed in the lowest level on each literacy scale.

Finally, it is interesting to note that although many respondents in Ohio and across the nation demonstrated limited literacy skills, the vast majority described themselves as reading, writing, speaking, and understanding English either well or very well. It is possible that their skills, while limited, allow them to meet some or most of their personal and occupational literacy needs. (These results are explored in Section IV.)

Level 2

Across the three scales, 27 to 31 percent of Ohio adults, or some 2.2 to 2.6 million individuals, are estimated to have proficiencies in the second lowest literacy level (Level 2). Twenty-six to 30 percent of adults in the region and 25 to 28 percent of adults nationwide were in this level.

[4] The letters P, D, and Q following the table numbers denote the scale represented in each table: P represents the prose scale; D, the document scale; and Q, the quantitative scale.

OHIO TABLE 1.2P

Characteristics of the Population, by Prose Literacy Level: Results for Ohio

CHARACTERISTIC	n	WGT N (/1000)	Percentage of adults in each prose literacy level with each characteristic: Level 1 225 or lower CPCT (SE)	Level 2 226 to 275 CPCT (SE)	Level 3 276 to 325 CPCT (SE)	Level 4 326 to 375 CPCT (SE)	Level 5 376 or higher CPCT (SE)	Average Proficiency PROF (SE)
Country of birth								
United States or U.S. territory	1,539	8,095	96 (1.2)	98 (1.3)	98 (1.6)	99 (1.3)	98 (1.3)	281 (2.3)
Other country	29	166	4 (10.1)!	2 (11.3)!	2 (13.4)!	1 (4.0)!	2 (1.2)!	*** (****)
Race/Ethnicity								
White	1,245	7,291	83 (2.1)	86 (1.7)	92 (1.6)	97 (1.6)	99 (0.9)	284 (2.6)
African American	289	812	17 (3.3)	14 (3.2)	8 (4.5)	3 (1.9)	1 (0.7)	253 (3.7)
Level of education								
Still in high school	70	370	4 (5.0)	5 (5.9)	5 (5.2)	3 (5.6)	3 (2.9)	277 (6.3)
0 to 8 years	51	489	22 (9.2)	7 (9.2)	1 (2.8)	0† (0.0)	0† (0.0)	210 (11.2)
9 to 12 years	185	1,267	38 (5.0)	22 (4.6)	8 (3.9)	1 (1.1)	0† (0.0)	235 (4.6)
High school	468	2,742	26 (3.0)	41 (4.0)	39 (4.0)	21 (2.8)	7 (4.8)	276 (3.3)
GED	45	245	1 (3.5)	4 (9.4)	4 (10.4)	1 (1.5)	0† (0.0)	276 (6.5)
Some postsecondary	497	1,890	5 (1.3)	16 (2.2)	29 (3.4)	36 (3.3)	27 (8.9)	305 (2.9)
Four year degree or more	251	1,257	4 (2.5)	5 (3.3)	12 (2.8)	38 (4.7)	63 (10.3)	329 (5.7)
Age								
16 to 18	79	438	4 (4.4)	6 (5.8)	6 (5.1)	4 (5.5)	3 (2.2)	279 (6.2)
19 to 24	203	1,015	5 (2.4)	11 (4.0)	15 (5.4)	17 (2.8)	11 (5.5)	297 (3.9)
25 to 39	583	2,641	17 (1.8)	30 (2.6)	34 (2.2)	40 (2.4)	50 (5.1)	294 (3.8)
40 to 54	429	1,983	14 (2.1)	22 (2.7)	28 (3.1)	28 (3.4)	31 (4.4)	292 (3.6)
55 to 64	176	779	14 (3.3)	10 (3.5)	9 (4.0)	7 (1.8)	2 (1.9)	267 (4.2)
65 and older	98	1,405	46 (5.4)	22 (5.7)	8 (4.7)	4 (4.4)	3 (3.7)	233 (10.6)
Physical or mental disability								
Yes	139	900	26 (6.9)	13 (7.1)	7 (4.8)	3 (2.3)	4 (2.1)	242 (7.0)
No	1,424	7,337	74 (2.9)	87 (1.9)	93 (1.6)	97 (1.5)	96 (1.7)	285 (2.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Compared with the adults in Level 1, those in Level 2 displayed skills in performing more diverse and challenging literacy tasks. On the prose scale, respondents whose proficiencies lie within the Level 2 range demonstrated the ability to make low-level inferences based on what they read and to compare or contrast information that can easily be found in text. Individuals in this level on

OHIO TABLE 1.2D

Characteristics of the Population, by Document Literacy Level: Results for Ohio

CHARACTERISTIC	n	WGT N (/1000)	Percentage of adults in each document literacy level with each characteristic: Level 1 225 or lower CPCT (SE)	Level 2 226 to 275 CPCT (SE)	Level 3 276 to 325 CPCT (SE)	Level 4 326 to 375 CPCT (SE)	Level 5 376 or higher CPCT (SE)	Average Proficiency PROF (SE)
Country of birth								
United States or U.S. territory	1,539	8,095	97 (1.6)	98 (1.4)	99 (1.2)	98 (1.8)	*** (****)	276 (2.5)
Other country	29	166	3 (10.6)!	2 (10.9)!	1 (9.8)!	2 (5.8)!	*** (****)	*** (****)
Race/Ethnicity								
White	1,245	7,291	81 (2.3)	87 (1.9)	93 (1.4)	97 (2.2)	*** (****)	280 (2.8)
African American	289	812	19 (3.9)	13 (2.5)	7 (4.0)	3 (1.7)	*** (****)	245 (4.3)
Level of education								
Still in high school	70	370	3 (8.1)	4 (6.9)	5 (4.7)	4 (5.1)	*** (****)	281 (7.0)
0 to 8 years	51	489	21 (9.4)	7 (9.3)	0† (0.2)	0† (0.0)	*** (****)	204 (9.1)
9 to 12 years	185	1,267	37 (4.3)	21 (3.8)	6 (4.2)	2 (1.6)	*** (****)	230 (5.2)
High school	468	2,742	28 (3.7)	42 (3.5)	36 (3.0)	23 (3.4)	*** (****)	271 (3.8)
GED	45	245	2 (4.5)	4 (9.8)	4 (8.8)	1 (1.9)	*** (****)	271 (6.7)
Some postsecondary	497	1,890	6 (1.4)	17 (2.7)	33 (2.2)	32 (3.4)	*** (****)	300 (2.4)
Four year degree or more	251	1,257	2 (1.2)	6 (5.3)	16 (4.8)	38 (5.9)	*** (****)	323 (5.8)
Age								
16 to 18	79	438	3 (7.0)	6 (6.3)	6 (3.9)	6 (4.2)	*** (****)	282 (5.9)
19 to 24	203	1,015	4 (2.4)	10 (3.5)	17 (3.1)	17 (3.3)	*** (****)	296 (4.2)
25 to 39	583	2,641	21 (2.9)	27 (3.8)	35 (3.3)	44 (3.9)	*** (****)	292 (3.3)
40 to 54	429	1,983	15 (1.8)	24 (3.1)	27 (2.6)	27 (2.9)	*** (****)	286 (3.3)
55 to 64	176	779	13 (3.5)	12 (3.1)	8 (2.0)	4 (2.4)	*** (****)	255 (4.8)
65 and older	98	1,405	43 (7.3)	22 (5.9)	7 (3.3)	2 (2.5)	*** (****)	227 (8.0)
Physical or mental disability								
Yes	139	900	26 (6.1)	12 (5.9)	6 (2.8)	2 (2.1)	*** (****)	235 (7.3)
No	1,424	7,337	74 (1.9)	88 (1.7)	94 (1.3)	98 (1.9)	*** (****)	281 (2.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

the document scale were generally able to locate a piece of information in a document in which plausible but incorrect information is also present. Individuals in the second level of quantitative literacy were likely to give correct responses to a task involving a single arithmetic operation using numbers that can readily be located in printed material.

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OHIO TABLE 1.2Q

Characteristics of the Population, by Quantitative Literacy Level: Results for Ohio

CHARACTERISTIC	n	WGT N (/1000)	Percentage of adults in each quantitative literacy level with each characteristic					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
			CPCT (SE)	CPCT (SE)	CPCT (SE)	CPCT (SE)	CPCT (SE)	PROF (SE)
Country of birth								
United States or U.S. territory	1,539	8,095	96 (1.8)	98 (1.8)	99 (1.9)	99 (0.8)	99 (1.5)	280 (2.8)
Other country	29	166	4 (10.1)!	2 (10.6)!	1 (12.1)!	1 (5.9)!	1 (1.9)!	*** (****)
Race/Ethnicity								
White	1,245	7,291	79 (1.8)	86 (1.9)	94 (2.0)	98 (1.1)	99 (1.0)	284 (2.9)
African American	289	812	21 (7.5)	14 (4.6)	6 (3.7)	2 (1.3)	1 (0.9)	240 (8.1)
Level of education								
Still in high school	70	370	4 (6.4)	6 (9.2)	5 (6.0)	3 (5.0)	2 (2.5)	273 (7.2)
0 to 8 years	51	489	21 (8.4)	7 (7.3)	1 (5.6)	0† (0.0)	0† (0.0)	203 (12.9)
9 to 12 years	185	1,267	37 (5.4)	22 (5.3)	8 (3.2)	1 (0.8)	0† (0.0)	229 (4.8)
High school	468	2,742	26 (3.6)	39 (3.8)	39 (4.3)	26 (2.7)	7 (3.0)	278 (4.2)
GED	45	245	1 (5.7)	4 (8.1)	4 (7.4)	2 (3.5)	0† (0.4)	280 (9.4)
Some postsecondary	497	1,890	6 (1.5)	17 (2.1)	30 (2.6)	32 (4.0)	34 (5.5)	305 (2.6)
Four year degree or more	251	1,257	3 (2.7)	5 (3.1)	13 (3.6)	35 (4.0)	57 (4.9)	329 (5.0)
Age								
16 to 18	79	438	5 (5.9)	7 (8.7)	5 (4.8)	4 (4.3)	3 (3.3)	274 (6.2)
19 to 24	203	1,015	5 (3.5)	10 (3.6)	18 (4.5)	13 (4.7)	12 (3.8)	295 (5.3)
25 to 39	583	2,641	22 (2.4)	31 (3.6)	31 (3.8)	42 (3.3)	46 (6.6)	292 (3.5)
40 to 54	429	1,983	15 (2.6)	23 (3.9)	25 (3.0)	30 (3.6)	31 (5.5)	293 (4.1)
55 to 64	176	779	11 (3.5)	11 (4.0)	10 (4.5)	7 (3.0)	4 (2.4)	268 (5.3)
65 and older	98	1,405	42 (5.1)	19 (5.6)	11 (3.5)	4 (3.4)	4 (5.6)	234 (8.2)
Physical or mental disability								
Yes	139	900	28 (5.4)	12 (3.8)	7 (4.1)	3 (2.0)	3 (1.9)	233 (8.3)
No	1,424	7,337	72 (3.1)	88 (2.3)	93 (2.1)	97 (1.2)	97 (1.5)	285 (2.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); CPCT = column percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Given the differences between the characteristics of the Level 1 population in Ohio and the state population as a whole, it is important to investigate whether certain groups are also over- or underrepresented in the other literacy levels. Ohio residents who performed in Level 2 do resemble the general population in most respects (Table 1.2P,D,Q). For example, adults with

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proficiencies in the Level 2 range were as likely as those in the state population as a whole to have been born in the United States or one of its territories (98 percent). The age and racial/ethnic characteristics of these populations are also highly similar.

Level 3

Across the literacy scales, 32 to 34 percent of the adults statewide, or between 2.6 and 2.8 million adults, are estimated to have proficiencies in the middle level of literacy (Level 3). Approximately one-third of the adults living in the Midwest (33 to 35 percent) and nationwide (31 to 32 percent) scored in this level. Respondents performing in the third level on the prose scale demonstrated skills in matching pieces of information by making low-level inferences and in integrating information from relatively long or dense text. Those in Level 3 on the document scale displayed the ability to integrate multiple pieces of information found in documents. Adults in this level on the quantitative scale displayed proficiency in using two or more numbers found in printed material and in interpreting arithmetic terms.

Ohio residents whose scores were in the Level 3 range differ in some important respects from the state population as a whole (Table 1.2P,D,Q). They are less likely to belong to a racial or ethnic minority group, for example; 6 to 8 percent of the Level 3 population is African American, compared with 10 percent of the statewide population. In addition, Ohio adults who scored in the middle of the proficiency range tend to be better educated than the state's adult population as a whole. Six to 9 percent of the adults in Level 3 reported that they had not attained a high school diploma or GED, compared with 21 percent of adults statewide. Adults who performed in Level 3 were also less likely than those in the general population to be age 65 or older and to report having limiting physical or mental conditions.

Level 4

Seventeen to 19 percent of the adults in Ohio, or between 1.4 and 1.6 million individuals, are estimated to have skills in the fourth literacy level. Similarly, 16 to 19 percent of the adults in the Midwest performed in this level. Nationwide, 17 percent of adults performed in this level on the prose and quantitative scales, and 15 percent were in this level on the document scale.

Respondents who demonstrated skills in the Level 4 range completed many of the more difficult assessment tasks successfully. Looking across the scales, adults in the fourth literacy level displayed an ability to synthesize information from lengthy or complex passages, to make inferences based on

text and documents, and to perform sequential arithmetic operations using numbers found in different types of displays. To perform these types of tasks successfully, readers were often required to make high level text-based inferences or to draw on background knowledge.

When the Level 4 population is compared with the entire adult population in Ohio, one finds interesting contrasts (Table 1.2P,D,Q). As was observed in the previous level, respondents with proficiencies in the fourth level of prose literacy were more likely than those in the state population as a whole to be White (97 to 98 percent, compared with 88 percent). Almost all of the Level 4 population (94 to 96 percent) reported having completed high school or a GED or having attended a postsecondary institution, compared with about three-quarters of the population statewide. Respondents who performed in the fourth level on each literacy scale were also far less likely than adults in the total population to be age 65 or older, or to report having a limiting physical or mental conditions. Only 3 percent of adults who scored in Level 4 on the prose scale reported having such conditions, compared with 11 percent of the state population.

Level 5

Just 2 to 4 percent of the respondents in Ohio, the Midwest, and the nation as a whole performed in Level 5 on each literacy scale— the highest level defined.

Some tasks at this level required readers to contrast complex information found in written materials, while others required them to make high level inferences or to search for information in dense text. On the document scale, adults performing in Level 5 showed the ability to use specialized knowledge and to search through complex displays for particular pieces of information. Respondents in the highest level on the quantitative scale demonstrated the ability to determine the features of arithmetic problems either by examining text or by using background knowledge, and then to perform the multiple arithmetic operations required. It is estimated that about one-quarter of a million individuals statewide, and less than 8 million nationwide, succeeded on these types of tasks — the most difficult included in the survey.

The characteristics of adults who performed in the highest literacy level are quite different from those of adults in the state population as a whole (Table 1.2P,D,Q). On the quantitative scale, for example, Ohio residents who scored in the highest level were less likely than adults statewide to belong to a racial/ethnic minority group, less likely to be older, less likely to have physical or mental conditions, and more likely to be well educated.

Results for Adults in Different Age Groups

The age composition of the Ohio adult population is similar to that of the regional and national adult populations. For example, older adults (age 65 and older) comprise 17 percent of the adults in Ohio, 16 percent of the adults nationwide, and 18 percent of adults in the Midwest (Table 1.3P,D,Q).

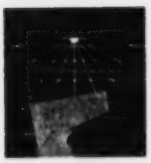
Adults age 55 to 64 and particularly those age 65 and older were more likely than younger individuals to perform in the lowest literacy level. On the prose scale, for example, 24 percent of Ohio residents in the 55 to 64 age group and 42 percent of those age 65 and older performed in Level 1, compared with just 6 to 12 percent of the adults in the younger age groups. Further, on each literacy scale, at least three-quarters (73 to 84 percent) of Ohio adults age 65 and older performed in the two lowest literacy levels defined. Similar patterns are seen in the regional and national results. Nationwide, for example, 55 to 64 percent of the 55- to 64-year-olds and 71 to 85 percent of those age 65 and older had proficiencies in the two lowest levels.

Average literacy scores tend to increase from the 16 to 18 age group to the 35 to 44 age group, but the pattern observed varies somewhat across the state, regional, and national populations. In the Midwest and nation, the average scores of 19- to 24-year-olds are lower than those of adults age 35 to 44. In Ohio, however, these two groups performed comparably. On the document scale, for example, 19- to 24-year-olds in the state had an average score of 296, compared with 293 for Ohio residents age 35 to 44. Further, it is interesting to note that the average literacy scores of Ohio's 19- to 24-year-olds are higher than those of their counterparts nationwide.

In the state, regional, and national populations alike, older adults tended to display lower average proficiencies than younger adults. Nationwide, for example, average prose scores rise from 271 among 16- to 18-year-olds, to 280 among 19- to 24-year-olds, and to 289 among 35- to 44-year-olds, before declining across the older age groups -- to 282 among 45- to 54-year-olds, 260 among 55- to 64-year-olds, and 230 among those age 65 and older.

What explains the performance declines across the age groups? Given the association between education and literacy, one hypothesis is that some of the proficiency gap between older and younger adults is associated with differences in years of schooling. The survey results do, in fact, indicate that older adults — that is, those age 55 to 64 and age 65 and older — tend to have completed fewer years of schooling than younger adults.[5] (This is explored in Section II;

[5] The exception to this pattern occurs among 16- to 18-year-olds, many of whom are still in high school.



OHIO TABLE 1.3P

Prose Literacy Levels and Average Proficiencies, by Age: Results for Ohio, the Midwest, and the Nation

AGE				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
16 to 18	79	438	5	12 (4.5)	34 (6.4)	38 (8.0)	14 (7.4)	2 (2.1)	279 (6.2)
19 to 24	203	1,015	12	6 (2.4)	25 (4.2)	41 (6.4)	26 (3.1)	3 (1.6)	297 (3.9)
25 to 34	395	1,761	21	9 (2.2)	28 (3.3)	38 (2.7)	21 (3.3)	4 (1.5)	292 (4.9)
35 to 44	350	1,643	20	9 (2.2)	24 (4.6)	35 (3.8)	27 (4.4)	6 (1.8)	297 (4.3)
45 to 54	267	1,220	15	8 (2.0)	27 (3.9)	43 (5.3)	19 (3.6)	3 (1.1)	290 (3.4)
55 to 64	176	779	9	24 (3.7)	29 (4.1)	33 (4.5)	13 (2.4)	1 (0.7)	267 (4.2)
65 and older	98	1,405	17	42 (6.0)	36 (6.5)	16 (5.0)	4 (4.5)	1 (0.6)	233 (10.6)
Midwest									
16 to 18	366	2,637	6	10 (2.9)	32 (4.2)	44 (4.3)	13 (4.7)	1 (1.2)	282 (3.9)
19 to 24	928	5,041	11	10 (2.1)	29 (3.7)	41 (3.9)	18 (2.3)	2 (0.8)	286 (3.1)
25 to 34	1,895	9,424	21	9 (1.2)	26 (1.7)	38 (1.8)	23 (1.8)	4 (1.1)	294 (2.5)
35 to 44	1,716	9,230	20	10 (1.6)	21 (1.7)	36 (2.9)	27 (1.8)	6 (0.7)	297 (2.8)
45 to 54	1,123	6,102	13	11 (1.8)	25 (2.5)	41 (3.1)	20 (2.8)	4 (1.1)	289 (2.9)
55 to 64	890	4,656	10	18 (1.9)	32 (3.7)	36 (2.5)	13 (1.8)	1 (0.6)	271 (2.5)
65 and older	574	8,226	18	42 (3.4)	36 (3.3)	18 (2.1)	4 (1.4)	0† (0.2)	234 (4.1)
Nation									
16 to 18	1,237	10,424	5	16 (1.3)	35 (1.9)	38 (2.4)	11 (1.7)	1 (0.4)	271 (1.8)
19 to 24	3,344	24,515	13	14 (1.1)	29 (1.7)	37 (1.8)	18 (1.3)	2 (0.4)	280 (1.3)
25 to 34	6,701	41,326	22	16 (0.7)	25 (1.0)	34 (0.8)	21 (0.9)	4 (0.4)	282 (1.2)
35 to 44	5,930	39,755	21	14 (0.6)	21 (1.0)	35 (1.2)	24 (0.8)	6 (0.5)	289 (1.3)
45 to 54	3,729	25,992	14	16 (0.9)	25 (1.3)	34 (1.6)	21 (1.0)	5 (0.5)	282 (1.7)
55 to 64	2,924	19,503	10	26 (1.5)	31 (1.3)	30 (1.5)	12 (1.1)	1 (0.3)	260 (1.9)
65 and older	2,214	29,735	16	44 (1.6)	32 (1.6)	19 (1.3)	5 (0.9)	1 (0.3)	230 (2.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 1.3D

Document Literacy Levels and Average Proficiencies, by Age: Results for Ohio, the Midwest, and the Nation

AGE				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
16 to 18	79	438	5	11 (7.1)	34 (8.2)	36 (6.4)	18 (5.4)	2 (2.5)	282 (5.9)
19 to 24	203	1,015	12	6 (2.6)	25 (3.8)	44 (4.8)	23 (3.4)	2 (1.6)	296 (4.2)
25 to 34	395	1,761	21	11 (2.4)	26 (3.3)	37 (3.2)	21 (3.4)	5 (2.1)	290 (4.1)
35 to 44	350	1,643	20	11 (2.0)	26 (3.9)	33 (4.0)	26 (4.9)	4 (1.9)	293 (3.4)
45 to 54	267	1,220	15	12 (2.0)	33 (5.0)	38 (3.9)	16 (2.3)	2 (1.3)	282 (3.5)
55 to 64	176	779	9	25 (3.9)	38 (3.9)	29 (2.4)	7 (2.7)	0† (0.4)	255 (4.8)
65 and older	98	1,405	17	45 (7.7)	39 (7.2)	14 (4.3)	2 (2.5)	0† (0.0)	227 (8.0)
Midwest									
16 to 18	366	2,637	6	8 (2.4)	32 (3.5)	43 (4.4)	16 (2.6)	1 (0.8)	286 (3.8)
19 to 24	928	5,041	11	9 (1.7)	29 (3.1)	42 (3.5)	18 (2.1)	2 (0.8)	287 (2.9)
25 to 34	1,895	9,424	21	10 (1.6)	25 (1.4)	38 (2.1)	23 (2.0)	3 (0.9)	292 (2.2)
35 to 44	1,716	9,230	20	12 (1.6)	24 (2.3)	36 (2.7)	24 (2.2)	5 (1.0)	292 (3.0)
45 to 54	1,123	6,102	13	13 (1.5)	31 (2.8)	36 (3.4)	18 (1.9)	2 (1.0)	280 (2.4)
55 to 64	890	4,656	10	23 (2.0)	39 (3.2)	30 (2.5)	8 (1.3)	1 (0.4)	259 (2.1)
65 and older	574	8,226	18	49 (3.5)	36 (4.1)	13 (2.5)	2 (1.1)	0† (0.1)	222 (3.8)
Nation									
16 to 18	1,237	10,424	5	15 (1.4)	34 (2.2)	38 (2.6)	12 (1.9)	1 (0.5)	274 (1.8)
19 to 24	3,344	24,515	13	14 (1.0)	29 (1.4)	37 (1.6)	18 (1.1)	2 (0.4)	280 (1.3)
25 to 34	6,701	41,326	22	16 (0.7)	25 (0.7)	35 (0.8)	21 (0.9)	4 (0.3)	281 (1.2)
35 to 44	5,930	39,755	21	15 (0.9)	24 (1.0)	35 (1.1)	22 (1.1)	5 (0.5)	283 (1.4)
45 to 54	3,729	25,992	14	18 (1.1)	29 (0.9)	33 (1.4)	17 (0.8)	3 (0.6)	273 (1.4)
55 to 64	2,924	19,503	10	30 (1.4)	34 (1.4)	26 (1.3)	8 (0.8)	1 (0.3)	249 (1.9)
65 and older	2,214	29,735	16	53 (1.5)	32 (1.2)	13 (1.0)	2 (0.5)	0† (0.1)	217 (2.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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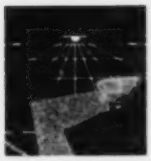


OHIO TABLE 1.3Q

Quantitative Literacy Levels and Average Proficiencies, by Age: Results for Ohio, the Midwest, and the Nation

AGE				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
16 to 18	79	438	5	17 (6.2)	35 (11.5)	31 (8.5)	15 (6.3)	3 (2.7)	274 (6.2)
19 to 24	203	1,015	12	7 (4.0)	22 (4.7)	47 (6.1)	21 (5.6)	4 (2.0)	295 (5.3)
25 to 34	395	1,761	21	13 (3.0)	26 (4.3)	33 (4.4)	24 (3.2)	5 (1.3)	290 (3.8)
35 to 44	350	1,643	20	11 (2.7)	25 (4.2)	31 (5.3)	26 (3.7)	7 (2.3)	297 (4.2)
45 to 54	267	1,220	15	11 (3.3)	27 (4.9)	35 (5.3)	22 (2.9)	4 (1.5)	290 (4.3)
55 to 64	176	779	9	20 (3.9)	30 (4.5)	35 (5.7)	13 (4.3)	1 (1.2)	268 (5.3)
65 and older	98	1,405	17	43 (5.2)	30 (7.5)	21 (5.3)	5 (3.6)	1 (1.4)	234 (8.2)
Midwest									
16 to 18	366	2,637	6	12 (2.7)	33 (5.5)	38 (4.9)	16 (3.2)	1 (0.5)	281 (4.0)
19 to 24	928	5,041	11	12 (2.1)	27 (2.8)	41 (2.9)	17 (2.3)	3 (0.7)	285 (3.2)
25 to 34	1,895	9,424	21	11 (1.6)	24 (2.2)	37 (2.0)	23 (1.6)	5 (1.2)	293 (2.5)
35 to 44	1,716	9,230	20	11 (1.5)	21 (3.0)	33 (2.7)	27 (2.7)	7 (1.3)	297 (3.7)
45 to 54	1,123	6,102	13	12 (2.2)	25 (2.3)	35 (2.7)	23 (2.6)	4 (1.3)	290 (2.5)
55 to 64	890	4,656	10	18 (1.9)	29 (4.1)	36 (3.4)	14 (2.1)	2 (0.7)	272 (2.8)
65 and older	574	8,226	18	39 (3.6)	30 (2.7)	22 (3.0)	7 (1.3)	1 (0.6)	237 (5.0)
Nation									
16 to 18	1,237	10,424	5	20 (1.7)	35 (2.6)	33 (1.9)	12 (1.5)	1 (0.5)	268 (1.8)
19 to 24	3,344	24,515	13	16 (1.1)	28 (1.4)	37 (1.4)	16 (1.0)	2 (0.5)	277 (1.6)
25 to 34	6,701	41,326	22	17 (0.7)	24 (0.7)	34 (0.8)	20 (0.8)	5 (0.5)	281 (1.1)
35 to 44	5,930	39,755	21	15 (0.8)	21 (1.1)	33 (1.0)	25 (0.7)	6 (0.5)	288 (1.4)
45 to 54	3,729	25,992	14	17 (1.1)	24 (1.2)	33 (1.2)	21 (1.4)	5 (0.5)	282 (1.6)
55 to 64	2,924	19,503	10	25 (1.5)	30 (1.9)	30 (1.6)	13 (1.2)	2 (0.6)	261 (2.0)
65 and older	2,214	29,735	16	45 (1.6)	26 (1.2)	20 (1.2)	7 (0.7)	2 (0.4)	227 (2.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source. Educational Testing Service, State Adult Literacy Survey, 1992.

see Table 2.2 and accompanying discussion.) Whereas Ohio adults below age 55 had attended an average of 13 years of schooling, individuals age 55 to 64 had finished 12 years and those age 65 and older had completed 11 years, on average.

Even when one controls for level of education, however, significant differences in literacy proficiencies across the age groups remain. Thus, other factors beyond education must contribute to the performance gaps observed. Changing immigration patterns may be a factor, for example, as may factors associated with the aging process.[6]

Results for Adults Born in the United States and Those Born in Other Countries

The vast majority of adults in Ohio (98 percent) were born in this country or one of its territories (Table 1.4P,D,Q). The proportion of foreign-born adults in the state (2 percent) and the Midwest (3 percent) are considerably lower than the proportion nationwide (10 percent).

It is not possible to examine the literacy proficiencies of foreign-born adults in Ohio due to the small number of such adults in the state (and, accordingly, the small sample of such adults in the survey). In the Midwest and national populations, however, native-born adults were much less likely than adults born abroad, many of whom learned English as a second language, to display limited proficiencies — that is, to perform in the lowest literacy level. Across the literacy scales, about half the foreign-born individuals (43 to 52 percent) performed in Level 1, compared with 15 to 20 percent of the native-born individuals.

Further, native-born adults were much more likely than foreign-born adults to reach the third and fourth literacy levels. Across the scales, approximately one-third of the adults who were born in the United States performed in Level 3 and 16 to 19 percent performed in Level 4. In contrast, only 17 to 21 percent of the foreign-born adults reached the third level and just 7 to 9 percent attained the fourth. In national population, adults born in the United States were far more likely than foreign-born adults to reach Level 5; in

[6] I.S. Kirsch, A. Jungeblut, L. Jenkins, and A. Kolstad. (1993). *Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey.* Washington, DC: U.S. Government Printing Office.

OHIO TABLE 1.4P

Prose Literacy Levels and Average Proficiencies, by Country of Birth: Results for Ohio, the Midwest, and the Nation

COUNTRY OF BIRTH				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
U.S. or U.S. territory	1,539	8,095	98	15 (1.4)	29 (1.6)	34 (2.0)	19 (1.5)	3 (0.5)	281 (2.3)
Other country	29	166	2	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
U.S. or U.S. territory	7,179	43,733	97	15 (0.9)	28 (1.1)	35 (1.3)	18 (0.8)	3 (0.3)	281 (1.1)
Other country	315	1,585	3	46 (5.4)	26 (4.3)	19 (5.1)	7 (1.3)	3 (1.7)	223 (7.9)
Nation									
U.S. or U.S. territory	23,378	172,162	90	17 (0.4)	27 (0.6)	34 (0.8)	18 (0.5)	3 (0.2)	279 (0.7)
Other country	2,715	19,127	10	52 (1.4)	22 (1.1)	17 (1.3)	7 (0.7)	1 (0.4)	212 (2.4)

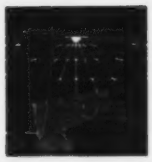
n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

the Midwest, however, there were no significant differences between the two groups in the likelihood of attaining this proficiency level.

The performance gap between native-born and foreign-born adults is also reflected in the average proficiency results. Among Midwest residents, for example, the gap in average prose scores between these two groups is 58 points. Foreign-born residents had average scores in the Level 1 range, while native-born individuals had scores in the low end of the Level 3 range. On the document



OHIO TABLE 1.4D

Document Literacy Levels and Average Proficiencies, by Country of Birth: Results for Ohio, the Midwest, and the Nation

COUNTRY OF BIRTH				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
U.S. or U.S. territory	1,539	8,095	98	18 (1.7)	31 (1.9)	32 (1.4)	17 (1.8)	3 (0.6)	276 (2.5)
Other country	29	166	2	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
U.S. or U.S. territory	7,179	43,733	97	18 (0.8)	30 (1.1)	33 (1.4)	16 (0.9)	2 (0.4)	275 (1.3)
Other country	315	1,585	3	43 (5.0)	26 (4.7)	21 (3.8)	8 (3.5)	2 (1.8)	227 (8.5)
Nation									
U.S. or U.S. territory	23,376	172,162	90	20 (0.5)	29 (0.5)	32 (0.6)	16 (0.4)	3 (0.2)	273 (0.7)
Other country	2,715	19,127	10	51 (1.4)	23 (1.2)	18 (1.0)	7 (0.8)	1 (0.2)	212 (2.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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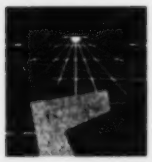


OHIO TABLE 1.4Q

Quantitative Literacy Levels and Average Proficiencies, by Country of Birth: Results for Ohio, the Midwest, and the Nation

COUNTRY OF BIRTH				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
U.S. or U.S. territory	1,539	8,095	98	17 (1.8)	27 (2.1)	33 (2.3)	19 (1.1)	4 (0.8)	280 (2.8)
Other country	29	166	2	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
U.S. or U.S. territory	7,179	43,733	97	16 (0.9)	26 (1.5)	34 (1.4)	19 (0.9)	4 (0.3)	281 (1.7)
Other country	315	1,585	3	43 (5.4)	25 (4.8)	20 (4.3)	9 (3.5)	2 (1.6)	229 (9.3)
Nation									
U.S. or U.S. territory	23,376	172,162	90	19 (0.5)	26 (0.5)	33 (0.6)	19 (0.3)	4 (0.2)	278 (0.8)
Other country	2,715	19,127	10	49 (1 6)	22 (1.6)	19 (1.1)	8 (0.7)	2 (0.4)	214 (2.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

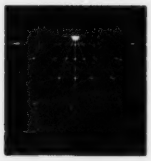
! Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Results for foreign-born adults by the number of years lived in the United States

In addition to contrasting the literacy skills of adults born in this country with the skills of those born elsewhere, it is useful to compare the performance of foreign-born individuals who have lived in this country for varying lengths of time (Table 1.5P,D,Q). One might expect individuals who have lived in this country for many years to demonstrate higher proficiencies in English than those who immigrated more recently.

The numbers of foreign-born Ohio residents are too small to provide reliable proficiency estimates for those who have lived in this country for various lengths of time. In addition, while the numbers of such adults in the Midwest are larger, the estimates they yield are still unstable (note the large standard errors). The national results therefore provide firmer ground for comparisons.



OHIO TABLE 1.5P

Prose Literacy Levels and Average Proficiencies of Foreign-born Adults, by Years Lived in the United States: Results for Ohio, the Midwest, and the Nation

YEARS LIVED IN THE UNITED STATES				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
1 to 5 years	5	21	14	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
6 to 10 years	2	10	7	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
More than 10 years	20	125	80	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
1 to 5 years	62	278	18	54 (12.1)	19 (7.2)	22 (12.0)	5 (4.1)	0† (0.2)	210 (22.0)
6 to 10 years	58	294	19	39 (13.9)!	40 (17.3)!	18 (16.6)!	2 (1.4)!	0† (0.3)!	225 (14.6)!
More than 10 years	181	940	62	46 (6.5)	23 (5.2)	19 (4.7)	8 (2.3)	4 (2.9)	229 (9.1)
Nation									
1 to 5 years	568	3,998	22	61 (2.6)	18 (2.6)	15 (2.2)	6 (1.6)	0† (0.7)	197 (4.3)
6 to 10 years	482	3,184	17	61 (3.4)	22 (4.5)	12 (3.8)	3 (1.8)	1 (0.7)	200 (4.9)
More than 10 years	1,565	11,286	61	48 (2.0)	24 (1.4)	19 (1.7)	8 (1.0)	1 (0.6)	220 (3.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents)
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

As seen in the preceding tables, approximately 10 percent of the adults living in the United States — or about 19 million individuals — were born in other countries. About 22 percent of these foreign-born adults have lived in this country for one to five years, 17 percent have lived here for six to 10 years, and 61 percent have lived here for more than 10 years.

The literacy proficiencies of foreign-born residents who have lived in the United States for six to 10 years tend to be similar to those of residents who have lived here for one to five years. Those who have lived in this country for more than 10 years, however, outperformed individuals who have lived in this

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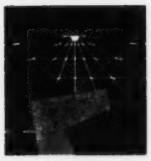

OHIO TABLE 1.5D

Document Literacy Levels and Average Proficiencies of Foreign-born Adults, by Years Lived in the United States: Results for Ohio, the Midwest, and the Nation

YEARS LIVED IN THE UNITED STATES				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
1 to 5 years	5	21	14	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
6 to 10 years	2	10	7	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
More than 10 years	20	125	80	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
1 to 5 years	62	278	18	47 (11.5)	19 (5.5)	21 (10.2)	12 (12.5)	1 (0.9)	223 (27.0)
6 to 10 years	56	294	19	34 (13.5)!	38 (17.0)!	23 (11.8)!	4 (7.3)!	1 (1.6)!	235 (13.6)!
More than 10 years	181	940	62	45 (5.6)	25 (4.2)	20 (3.8)	7 (2.0)	3 (3.2)	227 (9.9)
Nation									
1 to 5 years	568	3,998	22	58 (3.1)	21 (3.2)	15 (3.1)	6 (1.4)	1 (0.4)	198 (4.9)
6 to 10 years	482	3,184	17	58 (3.4)	21 (3.5)	16 (2.5)	4 (2.4)	1 (0.9)	202 (5.1)
More than 10 years	1,565	11,266	61	48 (1.9)	25 (1.8)	19 (1.5)	7 (0.9)	1 (0.3)	218 (2.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

country for fewer years. Across the scales, the average literacy scores of foreign-born adults who had been in this country for more than a decade were approximately 20 points higher than those of adults who had lived here for fewer years. Furthermore, they were less likely to perform in the lowest level on each literacy scale. On the prose scale, for example, about half (48 percent) of the foreign-born adults who had lived in this country for more than ten years performed in Level 1, compared with 61 percent of the more recent immigrants.

OHIO TABLE 1.5Q

Quantitative Literacy Levels and Average Proficiencies of Foreign-born Adults, by Years Lived in the United States: Results for Ohio, the Midwest, and the Nation

YEARS LIVED IN THE UNITED STATES				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
1 to 5 years	5	21	14	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
6 to 10 years	2	10	7	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
More than 10 years	20	125	80	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
1 to 5 years	62	278	18	45 (11.3)	23 (8.2)	23 (9.8)	8 (12.4)	1 (0.8)	222 (22.9)
6 to 10 years	56	294	19	39 (15.2)!	41 (15.2)!	14 (6.6)!	6 (6.1)!	0† (0.4)!	231 (15.7)!
More than 10 years	181	940	62	44 (6.0)	22 (6.3)	20 (5.3)	10 (2.2)	4 (2.7)	232 (11.7)
Nation									
1 to 5 years	568	3,998	22	56 (3.2)	20 (3.1)	16 (2.3)	7 (1.5)	2 (1.2)	201 (5.6)
6 to 10 years	482	3,184	17	57 (3.0)	22 (2.9)	15 (2.6)	5 (1.0)	1 (0.9)	204 (5.2)
More than 10 years	1,535	11,266	61	46 (2.0)	23 (2.4)	21 (1.7)	9 (0.9)	2 (0.6)	221 (3.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Results for Adults in Different Racial/Ethnic Groups

Eighty-eight percent of the adults in Ohio are White, 10 percent are African American, 2 percent are Latino, less than 1 percent are Asian/Pacific Islander, and less than 1 percent belong to other racial or ethnic groups, such as American Indian (Table 1.6P,D,Q). In racial and ethnic terms, the Ohio population resembles the regional population but is less diverse than the national population. Nationwide, 76 percent of adults are White, 11 percent are African American, 10 percent are Latino, 2 percent are Asian/Pacific

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OHIO TABLE 1.6P

Prose Literacy Levels and Average Proficiencies, by Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

RACE/ETHNICITY			Percentage of adults in each prose literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio								
White	1,245	7,291	14 (1.6)	27 (1.9)	35 (1.9)	20 (1.7)	3 (0.6)	284 (2.6)
African American	289	812	27 (3.7)	39 (3.6)	28 (5.6)	6 (2.4)	0† (0.2)	253 (3.7)
Latino	30	141	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Mexican	10	63	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest								
White	5,877	38,530	13 (0.9)	26 (1.1)	37 (1.1)	20 (0.9)	3 (0.4)	286 (1.2)
African American	1,161	4,222	33 (1.8)	41 (2.8)	22 (3.2)	4 (1.0)	0† (0.3)	245 (2.1)
Latino	346	1,703	42 (4.0)	26 (3.3)	25 (3.8)	6 (2.5)	0† (0.3)	232 (5.2)
Mexican	213	1,058	48 (6.0)	25 (5.3)	21 (6.0)	5 (3.2)	0† (0.3)	221 (8.7)
Puerto Rican	70	222	42 (10.1)!	38 (10.5)!	20 (6.7)!	0† (0.4)!	0† (0.9)!	226 (7.9)!
Cuban	4	26	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Asian/Pacific Islander	49	282	33 (10.3)!	28 (10.4)!	25 (10.2)!	11 (5.1)!	3 (2.1)!	236 (13.8)!
Other	61	581	18 (12.3)!	44 (10.4)!	32 (15.2)!	6 (1.7)!	1 (1.7)!	258 (26.1)!
Nation								
White	17,292	144,968	14 (0.4)	25 (0.6)	36 (0.8)	21 (0.5)	4 (0.3)	286 (0.7)
African American	4,963	21,192	38 (1.1)	37 (1.3)	21 (1.0)	4 (0.5)	0† (0.1)	237 (1.4)
Latino	3,126	18,481	49 (1.4)	26 (1.4)	19 (1.4)	6 (0.8)	1 (0.3)	215 (2.2)
Mexican	1,776	10,235	54 (1.9)	25 (1.6)	16 (1.3)	5 (0.8)	0† (0.3)	206 (3.2)
Puerto Rican	405	2,190	47 (5.0)	32 (5.5)	17 (3.6)	3 (1.7)	0† (0.3)	218 (6.1)
Cuban	147	928	53 (6.7)	24 (7.0)	17 (4.2)	6 (4.7)	1 (2.1)	211 (8.7)
C./S. American	424	2,608	56 (3.8)	22 (3.4)	17 (3.9)	4 (1.5)	0† (0.3)	207 (5.8)
Other	374	2,520	25 (3.2)	27 (5.9)	33 (5.2)	13 (3.4)	2 (1.6)	260 (5.3)
Asian/Pacific Islander	438	4,116	36 (4.4)	25 (3.8)	25 (3.1)	12 (1.9)	2 (0.7)	242 (6.7)
Other	272	2,532	33 (5.7)!	35 (5.5)!	24 (7.5)!	7 (2.4)!	1 (1.0)!	242 (7.0)!

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 1.6D

Document Literacy Levels and Average Proficiencies, by Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

RACE/ETHNICITY			Percentage of adults in each document literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio								
White	1,245	7,291	16 (2.0)	29 (2.2)	33 (1.7)	18 (2.0)	3 (0.6)	280 (2.8)
African American	289	812	33 (4.1)	39 (2.9)	23 (4.6)	4 (2.3)	0† (0.2)	245 (4.3)
Latino	30	141	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Mexican	10	63	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest								
White	5,877	38,530	16 (0.8)	29 (1.3)	35 (1.7)	18 (1.1)	3 (0.4)	280 (1.3)
African American	1,161	4,222	38 (2.3)	41 (3.1)	17 (1.5)	3 (1.3)	0† (0.1)	237 (2.3)
Latino	346	1,703	40 (4.0)	31 (6.0)	23 (5.8)	6 (2.7)	0† (0.4)	232 (5.9)
Mexican	213	1,058	43 (5.9)	31 (7.0)	19 (6.7)	6 (2.3)	0† (0.5)	223 (9.4)
Puerto Rican	70	222	41 (9.3)!	33 (11.8)!	25 (8.1)!	2 (2.9)!	0† (0.0)	233 (8.8)!
Cuban	4	26	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Asian/Pacific Islander	49	282	28 (12.6)!	32 (11.6)!	26 (8.2)!	13 (6.5)!	2 (1.9)!	246 (13.3)!
Other	61	581	25 (5.2)!	32 (7.6)!	34 (12.0)!	7 (10.6)!	1 (2.6)!	253 (12.1)!
Nation								
White	17,292	144,968	16 (0.5)	27 (0.6)	34 (0.7)	19 (0.5)	3 (0.2)	280 (0.8)
African American	4,963	21,192	43 (1.0)	36 (1.2)	18 (0.9)	3 (0.4)	0† (0.1)	230 (1.2)
Latino	3,126	18,481	50 (1.7)	26 (1.6)	18 (1.4)	5 (0.8)	1 (0.3)	213 (2.5)
Mexican	1,776	10,235	54 (2.1)	25 (1.9)	16 (1.6)	4 (0.8)	0† (0.2)	205 (3.5)
Puerto Rican	405	2,190	49 (3.8)	29 (5.1)	18 (2.6)	3 (1.1)	0† (0.3)	215 (6.6)
Cuban	147	928	48 (8.1)	30 (6.2)	16 (4.3)	4 (3.9)	2 (1.2)	212 (11.3)
C./S. American	424	2,608	53 (3.9)	25 (3.8)	16 (3.6)	4 (1.5)	0† (0.5)	206 (5.5)
Other	374	2,520	28 (3.0)	26 (3.6)	32 (4.4)	12 (4.4)	2 (1.8)	254 (5.3)
Asian/Pacific Islander	438	4,116	34 (3.5)	25 (3.6)	28 (3.7)	12 (2.3)	2 (0.9)	245 (5.6)
Other	272	2,532	34 (5.7)!	33 (4.4)!	25 (4.8)!	7 (2.8)!	1 (0.7)!	243 (7.6)!

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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OHIO TABLE 1.6Q

Quantitative Literacy Levels and Average Proficiencies, by Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

RACE/ETHNICITY	n	WGT N (/1000)	Percentage of adults in each quantitative literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
			RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio								
White	1,245	7,291	15 (1.6)	26 (2.1)	34 (2.3)	21 (1.3)	4 (0.8)	284 (2.9)
African American	289	812	37 (7.6)	38 (5.2)	21 (4.4)	4 (1.7)	0† (0.4)	240 (8.1)
Latino	30	141	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Mexican	10	69	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest								
White	5,877	38,530	13 (0.8)	25 (1.5)	36 (1.4)	22 (1.0)	4 (0.4)	288 (1.5)
African American	1,161	4,222	43 (2.8)	36 (3.4)	17 (2.4)	3 (1.2)	0† (0.1)	231 (2.8)
Latino	346	1,703	40 (5.4)	30 (7.3)	24 (5.9)	6 (3.0)	1 (0.6)	231 (7.3)
Mexican	213	1,058	42 (7.7)	29 (9.7)	24 (7.6)	4 (3.5)	1 (0.8)	225 (10.5)
Puerto Rican	70	222	42 (6.4)!	31 (10.5)!	24 (8.5)!	3 (1.7)!	0† (0.0)	229 (8.1)!
Cuban	4	26	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Asian/Pacific Islander	49	282	33 (11.9)!	20 (9.5)!	26 (7.8)!	17 (8.3)!	3 (2.4)!	251 (15.5)!
Other	61	581	30 (15.8)!	32 (16.3)!	31 (26.5)!	6 (4.7)!	0† (1.8)!	253 (30.6)!
Nation								
White	17,292	144,968	14 (0.5)	24 (0.6)	35 (0.7)	21 (0.4)	5 (0.2)	287 (0.8)
African American	4,963	21,192	46 (1.0)	34 (1.1)	17 (1.0)	3 (0.4)	0† (0.1)	224 (1.4)
Latino	3,126	18,481	50 (1.3)	25 (1.3)	19 (1.3)	5 (1.1)	1 (0.2)	212 (2.5)
Mexican	1,776	10,235	54 (1.7)	25 (2.0)	17 (2.0)	4 (0.8)	0† (0.2)	205 (3.6)
Puerto Rican	405	2,190	51 (3.3)	28 (4.8)	17 (3.2)	3 (1.3)	1 (0.4)	211 (7.2)
Cuban	147	928	46 (6.4)	20 (6.1)	25 (5.2)	6 (5.6)	3 (2.5)	223 (12.9)
C./S. American	424	2,608	53 (3.7)	25 (4.1)	18 (2.8)	4 (1.5)	0† (0.4)	203 (5.7)
Other	374	2,520	31 (3.0)	25 (4.6)	31 (3.1)	11 (4.7)	1 (0.7)	246 (6.9)
Asian/Pacific Islander	438	4,116	30 (3.9)	23 (3.4)	27 (3.0)	16 (2.4)	4 (1.7)	256 (6.7)
Other	272	2,532	38 (4.9)!	29 (5.5)!	26 (4.5)!	6 (2.9)!	1 (0.8)!	241 (5.5)!

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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Islander, and 1 percent are in other racial or ethnic groups. In contrast, 85 percent of the adults in the Midwest are White, 9 percent are African American, 4 percent are Latino, 1 percent are Asian/Pacific Islander, and 1 percent are in other racial/ethnic groups.

In Ohio, as in the Midwest and nation, White adults were less likely than African American adults to demonstrate limited English literacy skills (that is, to perform in Levels 1 and 2) and more likely to demonstrate advanced skills (that is, to attain Levels 4 and 5). Across the three scales, 14 to 16 percent of the White respondents in Ohio performed in the lowest level of literacy, compared with 27 to 37 percent of the African American respondents. The Latino population was not large enough to provide reliable comparisons.

Further, slightly more than one-quarter of the White adults in Ohio performed in the second lowest level of prose literacy, compared with 39 percent of African American adults. At the other end of the performance spectrum, only 6 percent of the African American adults in Ohio reached Level 4 on the prose scale and less than 1 percent attained Level 5. In contrast, 20 percent of the White adults in the state performed in Level 4, and 3 percent attained the highest level.

These racial/ethnic differences in literacy are repeated in the average prose proficiency results, where White individuals tended to have higher scores than African American individuals. The average prose proficiency of White adults in Ohio was 284, which lies in the low end of the Level 3 range. For African American adults it was 253, in the middle of the Level 2 range.

Performance gaps among the racial/ethnic groups are also found on the other literacy scales. The difference in average quantitative scores between White and African American adults in Ohio (44 points) was larger than the difference on the prose and document scales (31 to 35 points, respectively). Nationwide, the proficiency gap between these two groups was 49 points on the prose scale, 50 points on the document scale, and 63 points on the quantitative scale. It is also interesting to note that, in the national population, the average literacy proficiencies of Latino adults were significantly below those of African American adults.

Results for adults in different racial/ethnic groups, by country of birth

To better understand the differences in performance among various racial/ethnic groups, it is helpful to examine the percentages of adults in each group who were born inside and outside this country. In Ohio, as in the Midwest and nation, nearly all White (98 percent) and African American (99 percent) adults were born in the United States (Table 1.7). The sample of Latino adults in Ohio is too small to analyze their origins. In the Midwest and the nation, however, Latino adults were more likely than White or African American individuals to have been born abroad (34 percent in the Midwest and 48 percent in the nation).

With one exception, adults born in the United States tended to outperform foreign-born adults (Table 1.8P,D,Q). The exception occurs among African American adults, where native- and foreign-born individuals in the national population displayed comparable proficiencies. Among White and Latino adults, however, native-born individuals performed significantly better in the assessment than their foreign-born counterparts. The average prose score of native-born Latino adults nationwide was 252, for example, while for those born abroad it was 175 — some 77 points lower.

Indeed, when the differences in literacy proficiency among various racial/ethnic groups are viewed through the lens of country of birth, the pattern of results seen in Table 1.6P,D,Q changes substantially. In the Midwest and nationwide, Latino adults born in the United States had higher average literacy scores than African American adults, virtually all of whom were born here.

Further, when one takes country of birth into consideration, the proficiency differences between White and Latino adults diminish sharply on all three literacy scales. While the average scores of these two groups differ by 48 to 75 points in the regional and national populations, the difference is reduced to between 26 and 41 points among native-born individuals.

OHIO TABLE 1.7

Country of Birth, by Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

			Percentage of adults with each country of birth	
			United States or U.S. territory	Other country
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)
Ohio				
White	1,245	7,291	98 (0.6)	2 (0.6)
African American	289	812	99 (0.5)	1 (0.5)
Latino (all)	30	141	*** (****)	*** (****)
Mexican	10	63	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)
Midwest				
White	5,877	38,530	98 (0.3)	2 (0.3)
African American	1,161	4,222	98 (0.6)	2 (0.6)
Latino (all)	346	1,703	66 (4.6)	34 (4.6)
Mexican	213	1,058	58 (8.5)	42 (8.5)
Puerto Rican	70	222	95 (2.8)	5 (2.8)
Cuban	4	26	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)
Asian/Pacific Islander	49	282	15 (7.1)	85 (7.1)
Other	61	581	97 (6.0)	3 (6.0)
Nation				
White	17,292	144,968	96 (0.2)	4 (0.2)
African American	4,963	21,192	95 (0.5)	6 (0.5)
Latino (all)	3,126	18,481	52 (1.8)	48 (1.8)
Mexican	1,776	10,235	54 (2.2)	46 (2.2)
Puerto Rican	405	2,190	80 (2.9)	20 (2.9)
Cuban	147	928	11 (2.8)	89 (2.8)
C./S. American	424	2,608	21 (3.1)	79 (3.1)
Other	374	2,520	68 (5.5)	32 (5.5)
Asian/Pacific Islander	438	4,116	22 (2.5)	78 (2.5)
Other	272	2,532	78 (6.6)	22 (6.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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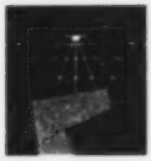

OHIO TABLE 1.8P

Average Prose Literacy Proficiencies, by Country of Birth and Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

			Average prose proficiency of adults with each country of birth	
			United States or U.S. territory	Other country
	n	WGT N (/1000)	PROF (SE)	PROF (SE)
Ohio				
White	1,245	7,291	284 (2.6)	*** (****)
African American	289	812	253 (3.8)	*** (****)
Latino (all)	30	141	*** (****)	*** (****)
Mexican	10	63	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)
Midwest				
White	5,877	38,530	286 (1.2)	254 (11.0)!
African American	1,161	4,222	244 (1.9)	*** (****)
Latino (all)	346	1,703	260 (5.5)!	177 (12.0)!
Mexican	213	1,058	262 (7.7)!	164 (9.0)!
Puerto Rican	70	222	227 (9.5)!	*** (****)
Cuban	4	26	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)
Asian/Pacific Islander	49	282	*** (****)	*** (****)
Other	61	581	257 (26.7)!	*** (****)
Nation				
White	17,292	144,968	287 (0.8)	258 (4.3)
African American	4,963	21,192	237 (1.4)	230 (6.4)
Latino (all)	3,126	18,481	252 (2.4)	175 (2.7)
Mexican	1,776	10,235	246 (3.2)	158 (3.7)
Puerto Rican	405	2,190	226 (6.9)	186 (10.3)!
Cuban	147	928	*** (****)	202 (10.9)
C./S. American	424	2,608	281 (6.3)!	187 (6.0)
Other	374	2,520	283 (7.7)	210 (10.5)!
Asian/Pacific Islander	438	4,116	274 (11.2)!	233 (7.2)
Other	272	2,532	254 (4.6)!	198 (16.2)!

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 1.8D

Average Document Literacy Proficiencies, by Country of Birth and Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

			Average document proficiency of adults with each country of birth	
			United States or U.S. territory	Other country
	n	WGT N (/1000)	PROF (SE)	PROF (SE)
Ohio				
White	1,245	7,291	280 (2.8)	*** (****)
African American	289	812	245 (4.4)	*** (****)
Latino (all)	30	141	*** (****)	*** (****)
Mexican	10	63	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)
Midwest				
White	5,877	38,530	281 (1.3)	252 (12.7)!
African American	1,161	4,222	236 (1.9)	*** (****)
Latino (all)	346	1,703	255 (6.2)!	186 (10.6)!
Mexican	213	1,058	261 (9.2)!	172 (10.5)!
Puerto Rican	70	222	233 (10.1)!	*** (****)
Cuban	4	26	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)
Asian/Pacific Islander	49	282	*** (****)	*** (****)
Other	61	581	253 (12.8)!	*** (****)
Nation				
White	17,292	144,968	281 (0.9)	255 (3.3)
African American	4,963	21,192	230 (1.2)	225 (8.7)
Latino (all)	3,126	18,481	249 (2.4)	174 (3.2)
Mexican	1,776	10,235	245 (3.0)	158 (4.3)
Puerto Rican	405	2,190	225 (6.7)	171 (12.4)!
Cuban	147	928	*** (****)	204 (13.0)
C./S. American	424	2,608	277 (5.0)!	188 (5.9)
Other	374	2,520	277 (7.5)	204 (11.1)!
Asian/Pacific Islander	438	4,116	266 (12.4)!	240 (5.4)
Other	272	2,532	253 (5.6)!	204 (15.6)!

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution – the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 1.8Q

Average Quantitative Literacy Proficiencies, by Country of Birth and Race/Ethnicity: Results for Ohio, the Midwest, and the Nation

			Average quantitative proficiency of adults with each country of birth	
			United States or U.S. territory	**Other country**
	n	WGT N (/1000)	PROF (SE)	PROF (SE)
Ohio				
White	1,245	7,291	285 (2.9)	*** (****)
African American	289	812	239 (8.2)	*** (****)
Latino (all)	30	141	*** (****)	*** (****)
Mexican	10	63	*** (****)	*** (****)
Puerto Rican	13	42	*** (****)	*** (****)
Cuban	0	0	*** (****)	*** (****)
C./S. American	2	8	*** (****)	*** (****)
Other	5	28	*** (****)	*** (****)
Asian/Pacific Islander	1	4	*** (****)	*** (****)
Other	3	13	*** (****)	*** (****)
Midwest				
White	5,877	38,530	288 (1.5)	255 (15.9)!
African American	1,161	4,222	230 (2.6)	*** (****)
Latino (all)	346	1,703	255 (8.0)!	185 (10.7)!
Mexican	213	1,058	262 (9.5)!	174 (8.9)!
Puerto Rican	70	222	229 (10.0)!	*** (****)
Cuban	4	26	*** (****)	*** (****)
C./S. American	34	205	*** (****)	*** (****)
Other	25	193	*** (****)	*** (****)
Asian/Pacific Islander	49	282	*** (****)	*** (****)
Other	61	581	252 (31.6)!	*** (****)
Nation				
White	17,292	144,968	288 (0.8)	260 (4.2)
African American	4,963	21,192	224 (1.4)	227 (7.1)
Latino (all)	3,126	18,481	247 (2.7)	173 (3.0)
Mexican	1,776	10,235	244 (3.1)	158 (4.5)
Puerto Rican	405	2,190	223 (6.6)	166 (16.0)!
Cuban	147	928	*** (****)	217 (14.6)
C./S. American	424	2,608	275 (5.1)!	185 (6.4)
Other	374	2,520	271 (8.2)	191 (13.1)!
Asian/Pacific Islander	438	4,116	279 (10.0)!	249 (7.9)
Other	272	2,532	252 (5.4)!	203 (12.2)!

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Results for Adults by the Number of Years Lived in Ohio

Decision makers in Ohio were interested in gathering information on the length of time that the state's residents had lived in the state. Accordingly, survey respondents in Ohio were asked to report the number of years they had lived there. The results should be interpreted with caution, however, because the percentage of respondents who did not answer this question was relatively high (6 percent).

More than three-quarters of the adults in Ohio reported having lived in the state for more than 20 years, and another 12 percent said they had been residents for 16 to 20 years (Table 1.9). In contrast, only 1 percent of the respondents had

OHIO TABLE 1.9

Prose, Document, and Quantitative Literacy Levels and Average Proficiencies, by Years Lived in Ohio: Results for Ohio

				Percentage of adults in each literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose									
Less than 1 year	15	64	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
1 to 5 years	62	287	4	10 (6.7)!	26 (9.2)!	35 (12.7)!	27 (7.0)!	2 (2.6)!	292 (8.4)!
6 to 10 years	45	192	3	9 (5.4)	20 (10.4)	37 (11.9)	27 (7.6)	7 (4.4)	300 (7.4)
11 to 15 years	47	212	3	15 (6.3)!	17 (7.5)!	33 (11.7)!	30 (15.5)!	5 (3.7)!	298 (11.9)!
16 to 20 years	165	853	12	7 (2.3)	27 (7.0)	43 (8.8)	21 (6.7)	2 (1.7)	292 (4.7)
More than 20 years	1,138	5,252	77	11 (1.3)	28 (2.1)	38 (2.7)	20 (1.9)	4 (1.0)	289 (2.9)
Document									
Less than 1 year	15	64	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
1 to 5 years	62	287	4	13 (5.3)!	29 (5.9)!	29 (8.0)!	26 (7.3)!	2 (2.3)!	288 (9.4)!
6 to 10 years	45	192	3	10 (5.9)	25 (5.8)	33 (10.2)	24 (8.4)	8 (4.9)	295 (9.2)
11 to 15 years	47	212	3	14 (8.1)!	18 (6.4)!	33 (8.9)!	29 (13.9)!	6 (4.5)!	297 (14.0)!
16 to 20 years	165	853	12	8 (2.6)	26 (3.7)	43 (5.9)	22 (5.8)	2 (3.1)	292 (3.8)
More than 20 years	1,138	5,252	77	13 (1.6)	30 (2.0)	36 (1.4)	19 (2.1)	3 (0.7)	284 (3.0)
Quantitative									
Less than 1 year	15	64	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
1 to 5 years	62	287	4	13 (5.6)!	25 (7.6)!	32 (10.7)!	26 (8.5)!	4 (3.2)!	290 (8.1)!
6 to 10 years	45	192	3	13 (6.4)	24 (11.1)	30 (10.1)	20 (7.9)	12 (4.6)	293 (9.0)
11 to 15 years	47	212	3	14 (6.3)!	21 (8.8)!	29 (9.9)!	27 (9.5)!	10 (5.5)!	299 (13.2)!
16 to 20 years	165	853	12	11 (3.3)	26 (5.6)	41 (5.4)	19 (4.0)	3 (1.8)	287 (3.6)
More than 20 years	1,138	5,252	77	12 (1.8)	27 (3.4)	35 (3.7)	22 (1.3)	4 (0.9)	289 (3.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

! Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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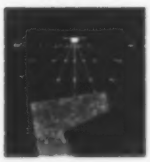
lived in the state for less than a year, and 4 percent had lived there for one to five years. There were no significant differences in average proficiency among adults who had lived in the state for different lengths of time.

Results for Adults by Reason for Moving to Ohio

Decision makers in Ohio were also interested in asking those who had moved to the state recently (in the past five years) the primary reason why they had moved there. Accordingly, survey respondents in Ohio were given a list of reasons — accompanying family or another person, finding a job, accepting a new job or transferring jobs, going to school, or other — and asked to indicate their primary reason for moving to the state. The results should be interpreted with caution, however, because the percentage of respondents who did not answer this question was relatively high (8 percent).

Nine percent of the Ohio survey participants had moved into the state within the past five years for one of the reasons listed — family, job, school, or other (Table 1.10). The remaining 91 percent said they had not moved into the



OHIO TABLE 1.10

Prose, Document, and Quantitative Literacy Levels and Average Proficiencies, by Primary Reason for Moving to Ohio: Results for Ohio

				Percentage of adults in each literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose									
Did not move into Ohio in the last 5 years	1,316	6,110	91	10 (1.5)	27 (1.6)	38 (2.4)	21 (1.5)	4 (0.8)	289 (2.6)
Family, job, school, or other reason	126	599	9	8 (3.6)	24 (5.3)	35 (6.5)	29 (5.2)	4 (3.0)	299 (5.0)
Document									
Did not move into Ohio in the last 5 years	1,316	6,110	91	12 (1.7)	29 (1.8)	37 (1.4)	19 (2.0)	3 (0.7)	285 (2.7)
Family, job, school, or other reason	126	599	9	11 (3.3)	25 (4.6)	31 (7.5)	30 (5.9)	4 (2.2)	296 (5.8)
Quantitative									
Did not move into Ohio in the last 5 years	1,316	6,110	91	12 (1.8)	26 (2.5)	36 (3.0)	21 (1.2)	4 (1.0)	289 (3.0)
Family, job, school, or other reason	126	599	9	10 (3.1)	23 (5.3)	32 (6.3)	29 (5.2)	6 (3.0)	298 (5.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

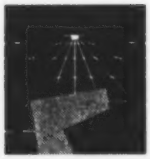
† Percentages less than 0.5 are rounded to zero.
‡‡‡ Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
‡ Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

state in the past five years. There were no significant differences in proficiency between these two groups.

Results for Adults with Physical or Mental Conditions

One of the background questions included in the survey asked respondents whether they have physical or mental conditions that keep them from participating fully in work, school, housework, or other activities. Slightly more than 10 percent of the adults in Ohio, the Midwest, and the nation reported having such conditions (Table 1.11P,D,Q).



OHIO TABLE 1.11P

Prose Literacy Levels and Average Proficiencies, by Disability Status: Results for Ohio, the Midwest, and the Nation

PHYSICAL OR MENTAL DISABILITY				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Yes	139	900	11	38 (7.4)	33 (8.0)	23 (5.9)	5 (2.7)	1 (1.4)	242 (7.0)
No	1,424	7,337	89	13 (1.3)	28 (1.6)	36 (1.8)	20 (1.5)	3 (0.6)	285 (2.4)
Midwest									
Yes	739	5,378	12	44 (2.9)	32 (3.7)	19 (3.3)	6 (1.5)	1 (0.5)	232 (4.1)
No	6,747	39,906	88	13 (0.7)	27 (1.0)	37 (1.5)	20 (0.9)	3 (0.4)	286 (0.9)
Nation									
Yes	2,806	22,205	12	46 (1.1)	30 (1.6)	18 (1.5)	5 (0.9)	1 (0.2)	227 (1.6)
No	23,256	168,879	88	17 (0.4)	26 (0.6)	34 (0.8)	19 (0.5)	4 (0.2)	278 (0.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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OHIO TABLE 1.11D

Document Literacy Levels and Average Proficiencies, by Disability Status: Results for Ohio, the Midwest, and the Nation

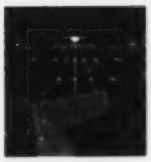
PHYSICAL OR MENTAL DISABILITY				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Yes	139	900	11	43 (6.2)	34 (7.2)	19 (3.7)	3 (2.3)	1 (1.5)	235 (7.3)
No	1,424	7,337	89	15 (1.5)	30 (1.7)	34 (1.5)	18 (1.9)	3 (0.7)	281 (2.3)
Midwest									
Yes	739	5,378	12	48 (3.3)	32 (3.8)	15 (2.9)	4 (1.8)	1 (0.5)	223 (4.8)
No	6,747	39,906	88	15 (0.7)	30 (1.1)	35 (1.5)	18 (1.0)	3 (0.4)	280 (1.0)
Nation									
Yes	2,806	22,205	12	51 (1.3)	30 (1.2)	15 (0.9)	4 (0.6)	1 (0.2)	219 (1.9)
No	23,256	168,879	88	19 (0.4)	28 (0.5)	33 (0.6)	17 (0.4)	3 (0.2)	273 (0.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

When the literacy levels and proficiencies of individuals who reported having limiting physical or mental conditions are compared with those of other adults, sharp contrasts are evident. On each scale, Ohio residents who said they have such conditions were far more likely than individuals without conditions to perform in the lowest literacy level and far less likely to reach the highest levels. On the document scale, for example, respondents who said they have limiting conditions were approximately three times more likely than others to perform in Level 1; 43 percent of adults with conditions demonstrated proficiencies in this range, compared with only 15 percent of those without conditions. At the other end of the spectrum, only 4 percent of those who reported having conditions performed in the two highest levels of document literacy, compared with 21 percent of the adults without conditions.



OHIO TABLE 1.11Q

Quantitative Literacy Levels and Average Proficiencies, by Disability Status: Results for Ohio, the Midwest, and the Nation

PHYSICAL OR MENTAL DISABILITY				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Yes	139	900	11	45 (5.9)	28 (4.9)	21 (4.7)	5 (2.4)	1 (1.5)	233 (8.3)
No	1,424	7,337	89	14 (1.7)	27 (2.2)	34 (2.3)	21 (1.3)	4 (0.8)	285 (2.6)
Midwest									
Yes	739	5,378	12	46 (3.0)	26 (2.2)	21 (3.4)	6 (1.1)	1 (0.8)	226 (6.0)
No	6,747	39,906	88	13 (0.9)	26 (1.6)	35 (1.4)	21 (1.1)	4 (0.4)	287 (1.3)
Nation									
Yes	2,806	22,205	12	49 (1.2)	25 (1.1)	19 (1.2)	6 (0.7)	1 (0.4)	220 (2.4)
No	23,256	168,879	88	19 (0.5)	25 (0.6)	33 (0.6)	19 (0.4)	4 (0.2)	278 (0.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

As a result of the differences in the distributions of performance for these two groups, the average proficiencies of Ohio respondents who have limiting physical or mental conditions were considerably lower than those of individuals who do not. Their average document score (235) is at the low end of the Level 2 range, for example, while the average score of adults without conditions is 281 — within the Level 3 range. Similar patterns are found on the prose and quantitative scales.

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Results for Males and Females

The performance results for men and women differ across the three literacy scales (Table 1.12P,D,Q). Among adults in Ohio, the average prose scores of men (281) and women (280) are nearly the same, as are their average document scores (279 and 273, respectively). Yet, on the quantitative scale, the 14-point gap between men (287) and women (273) is statistically significant. In the Midwest population, men outperform women on the quantitative scale, while in the national population, men outperform women on both the document and quantitative scales.

OHIO TABLE 1.12P

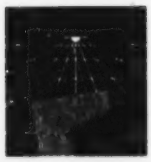
Prose Literacy Levels and Average Proficiencies, by Sex: Results for Ohio, the Midwest, and the Nation

SEX				*Percentage of adults in each prose literacy level*					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Male	633	3,910	47	15 (2.2)	29 (2.1)	34 (2.6)	19 (2.5)	3 (1.1)	281 (3.8)
Female	931	4,334	53	17 (2.1)	28 (2.1)	34 (1.7)	18 (1.8)	3 (0.7)	280 (3.0)
Midwest									
Male	3,331	21,621	48	17 (1.2)	28 (1.3)	34 (2.1)	18 (1.0)	3 (0.6)	278 (1.6)
Female	4,152	23,645	52	16 (1.1)	28 (1.3)	36 (1.0)	18 (1.0)	3 (0.4)	280 (1.6)
Nation									
Male	11,770	92,098	48	22 (0.6)	26 (0.9)	31 (1.2)	18 (0.5)	4 (0.3)	272 (0.9)
Female	14,279	98,901	52	20 (0.5)	28 (0.7)	33 (0.7)	17 (0.5)	3 (0.2)	273 (0.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.



OHIO TABLE 1.12D

Document Literacy Levels and Average Proficiencies, by Sex: Results for Ohio, the Midwest, and the Nation

SEX				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Male	633	3,910	47	16 (3.0)	30 (2.4)	33 (1.9)	18 (2.8)	3 (0.9)	279 (4.5)
Female	931	4,334	53	20 (2.9)	31 (3.4)	31 (2.2)	16 (1.4)	2 (0.8)	273 (3.0)
Midwest									
Male	3,331	21,621	48	18 (1.2)	29 (1.4)	33 (2.0)	17 (1.8)	3 (0.5)	275 (1.9)
Female	4,152	23,645	52	19 (1.2)	31 (1.4)	33 (1.6)	15 (1.1)	2 (0.4)	272 (1.7)
Nation									
Male	11,770	92,098	48	23 (0.6)	27 (0.5)	31 (0.8)	17 (0.5)	3 (0.2)	269 (0.9)
Female	14,279	98,901	52	23 (0.6)	30 (0.7)	31 (0.6)	14 (0.5)	2 (0.2)	265 (0.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

These performance differences between men and women in the state, regional, and national populations may be the result of many variables. One factor may be that women tend to live longer than men and that older adults tend to have lower literacy proficiencies than younger adults, as seen earlier in this section. Further, among older individuals, women tend to have fewer years of schooling than men, and lower levels of education are also associated with lower proficiencies.

The question, then, is whether young men and women have comparable literacy skills, and the answer is yes. There were no differences in average prose, document, or quantitative proficiency between young men and women (age 21 to 25) who participated in the national survey. The performance gap between men and women in the adult population as a whole therefore appears to be associated with age and is not found among younger adults.

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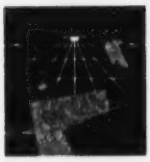


OHIO TABLE 1.12Q

Quantitative Literacy Levels and Average Proficiencies, by Sex: Results for Ohio, the Midwest, and the Nation

SEX				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Male	633	3,910	47	14 (2.4)	25 (3.3)	35 (4.4)	22 (1.6)	5 (1.1)	287 (4.3)
Female	931	4,334	53	20 (2.8)	29 (3.1)	31 (2.1)	17 (1.4)	3 (0.8)	273 (3.8)
Midwest									
Male	3,331	21,621	48	15 (1.4)	24 (2.2)	34 (1.9)	22 (1.2)	5 (0.4)	285 (1.9)
Female	4,152	23,645	52	19 (1.2)	28 (1.5)	33 (2.1)	17 (1.4)	3 (0.5)	275 (2.2)
Nation									
Male	11,770	92,098	48	21 (0.7)	23 (0.5)	31 (0.6)	20 (0.4)	5 (0.3)	277 (0.9)
Female	14,279	98,901	52	23 (0.5)	28 (0.9)	31 (1.0)	15 (0.6)	3 (0.3)	266 (0.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Summary

The average prose, document, and quantitative proficiency scores of adults in Ohio are almost identical to those of adults in the Midwest and are higher than those of adults nationwide. In all three of these populations, the average scores on each literacy scale are in the high end of the Level 2 range (226 to 275) or the low end of the Level 3 range (276 to 325).

Sixteen percent of the adults in Ohio had scores in the lowest level defined on the prose scale, while 18 percent were in Level 1 on the document scale and 17 percent were in Level 1 on the quantitative scale. Those who performed in the range for this level were varied with respect to their characteristics as well as their skills. Ohio residents who performed in Level 1,

for example, were more likely than adults statewide to have been born outside the United States, to belong to a racial/ethnic minority group, to have less than a high school education, to be age 65 or older, and to have limiting physical or mental conditions.

Across the three scales, 27 to 31 percent of Ohio adults had scores in the second lowest proficiency level (Level 2). Between 32 and 34 percent of the adults statewide performed in the third level on each scale, and 17 to 19 percent demonstrated skills in the fourth level. Just 2 to 4 percent of the respondents in Ohio, the Midwest, and the nation performed in Level 5 on each literacy scale — the highest proficiency level defined in the survey.

Older adults (those age 55 to 64 and age 65 and older) were more likely than younger adults to perform in the lowest level on each scale. Among the younger age groups, the differences in the percentages of individuals who performed in each level are relatively small, but individuals in the middle age categories were more likely than those in the older age groups to reach the highest proficiency levels. Ohio residents age 19 to 24 had higher average proficiencies on all three scales than their counterparts nationwide.

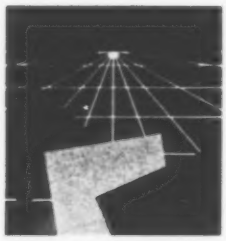
Virtually all of the Ohio respondents (98 percent) were born in the United States or one of its territories. In the regional and national populations, native-born adults tended to be more proficient in English than individuals born abroad, many of whom learned English as a second language. Foreign-born adults who have lived in this country for more than a decade outperformed individuals who have lived in this country for fewer years.

In Ohio, as in the region and nation, White adults were less likely than African American adults to demonstrate limited English literacy skills and more likely to demonstrate advanced skills.

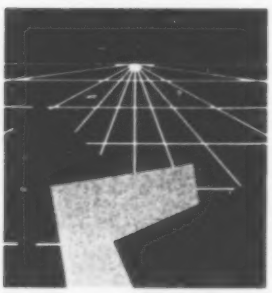
More than three-quarters of the survey respondents in Ohio had lived in the state for more than 20 years, and another 12 percent had been residents for 16 to 20 years. There were no significant differences in average proficiency among adults who had lived in the state for various lengths of time.

Ohio residents who said they have physical or mental conditions that keep them from participating fully in daily activities were far more likely than individuals without such conditions to perform in the lowest literacy level on each scale and far less likely to reach the highest levels.

Finally, while the average prose and document scores of men and women are comparable, men in Ohio had higher average quantitative scores than women.



SECTION II



SECTION II

Education and Training

In the past few decades, the American educational system has been the subject of unprecedented scrutiny. Spurred by numerous studies decrying the quality of primary and secondary education in this country, many business leaders, policy makers, and others have become alarmed about the capacity of American schools to prepare individuals to lead productive, rewarding lives, as well as to promote social well-being and ensure our nation's economic competitiveness.

Given these concerns, and given the close ties between education and literacy, the committees that guided the State and National Adult Literacy Surveys determined that respondents should be asked an extensive series of questions about their educational attainments in the formal school system, as well as about their participation in adult education and training. These areas are addressed in this section of the report, and the relationship between education and literacy is probed.

Educational Background

The level of education attained is strongly associated with literacy skills.[1] The following pages present survey data on the educational attainments of adults in Ohio and nationwide, as well as on the attainments of respondents who belong to various racial/ethnic, age, and other groups. In addition, data are presented on respondents' educational enrollment and goals, participation in high school equivalency programs, and, for those who did not graduate from high school, their reasons for dropping out.

[1] In this section, "level of education" refers to the highest level of education that respondents reported having completed at the time of the survey.

Highest level of education attained in the United States

The educational attainments of adults in Ohio were similar to those of adults in the Midwest (Table 2.1P,D,Q). Four percent of the state's residents were still in high school at the time of the survey. Six percent had completed less than nine years of schooling, and another 15 percent had completed some secondary education without receiving a diploma. A high school diploma was the highest level of education attained by one-third of the state's population, and a GED or high school equivalency was the highest level reached by another 3 percent.

In all, 38 percent of the adults living in Ohio had continued their education beyond high school or the GED. Twenty percent of the state's residents had completed some postsecondary education without receiving a degree, while 3 percent had earned a two-year degree, and 9 percent had earned a degree from a four-year institution. Another 6 percent of adults in Ohio had continued their education beyond a four-year college degree.

As expected, adults who had completed higher levels of schooling tended to outperform those with more limited education. They were much less likely to perform in the lowest literacy levels on each scale and much more likely to attain the highest levels.

In fact, average literacy proficiencies rise steadily across the entire range of education levels. The average prose proficiency of Ohio residents who did not go beyond eighth grade was 210, compared with 235 for those who completed between nine and 12 years of schooling and 276 for those who earned a high school diploma or GED but went no further. Individuals with some postsecondary education but no degree had an average prose score of 302, compared with 320 for those with a two-year degree, 317 for individuals whose highest level of education was a four-year degree, and 345 for those who had completed some postgraduate studies beyond the four-year degree. Similar patterns are found on the document and quantitative scales, where average literacy proficiencies also rise with each successive level of educational attainment.

While the average scores of adults with less than a high school education are either in the Level 1 range or in the low end of Level 2, the average scores of those who received a diploma or GED are in the high end of Level 2 or the low end of the Level 3 range, and of those who earned a college degree, in the high end of the range for Level 3.

Stated differently, the difference in average prose proficiency between adults who had completed no more than eight years of education and those who had finished at least some graduate work is 135 points. This translates to a gap of almost three proficiency levels — a very large difference in the difficulty and complexity of literacy skills and strategies. This might mean the difference,

OHIO TABLE 2.1P

Prose Literacy Levels and Average Proficiencies, by Level of Education in the United States: Results for Ohio, the Midwest, and the Nation

LEVEL OF EDUCATION ATTAINED IN THE UNITED STATES				*Percentage of adults in each prose literacy level*					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Still in high school	70	370	4	13 (5.2)	33 (6.4)	40 (8.2)	13 (7.6)	2 (2.6)	277 (6.3)
0 to 8 years	81	469	6	58 (10.0)	34 (11.0)	8 (3.6)	0† (0.0)	0† (0.0)	210 (11.2)
9 to 12 years	185	1,287	15	39 (5.8)	41 (7.4)	18 (5.0)	2 (1.1)	0† (0.0)	235 (4.6)
High school	468	2,742	33	12 (2.4)	35 (3.8)	41 (4.6)	12 (2.4)	1 (0.6)	276 (3.3)
GED	45	245	3	4 (4.2)	42 (11.4)	49 (11.4)	5 (3.6)	0† (0.0)	276 (6.5)
Some postsecondary	424	1,636	20	4 (1.4)	22 (3.0)	45 (4.0)	27 (2.7)	3 (1.7)	302 (3.2)
Two year degree	79	252	3	1 (0.6)	13 (6.8)	37 (11.9)	42 (10.7)	6 (7.6)	320 (11.0)
Four year degree	137	734	9	7 (4.3)	13 (5.6)	30 (6.3)	40 (7.2)	9 (2.4)	317 (8.1)
Graduate studies/degree	114	823	6	0† (0.4)	2 (2.1)	25 (7.0)	55 (8.7)	17 (5.6)	345 (6.0)
Midwest									
Still in high school	301	2,343	5	11 (2.7)	32 (4.6)	43 (4.8)	13 (5.2)	1 (1.1)	282 (3.9)
0 to 8 years	412	3,556	8	64 (5.2)	31 (4.5)	5 (2.0)	0† (0.2)	0† (0.0)	199 (5.8)
9 to 12 years	865	5,820	13	39 (4.1)	40 (3.3)	19 (2.2)	3 (1.1)	0† (0.1)	235 (3.3)
High school	1,992	13,306	29	13 (1.5)	36 (1.9)	40 (2.9)	10 (1.5)	1 (0.2)	274 (1.3)
GED	314	1,594	4	12 (3.8)	37 (6.4)	44 (5.8)	7 (2.7)	0† (0.0)	271 (4.6)
Some postsecondary	1,983	10,149	22	6 (1.2)	23 (1.9)	46 (2.5)	22 (1.7)	2 (0.6)	297 (1.8)
Two year degree	300	1,395	3	3 (2.1)	17 (4.0)	42 (5.3)	33 (5.7)	5 (3.7)	310 (5.0)
Four year degree	704	3,816	8	2 (1.0)	9 (2.0)	33 (3.8)	44 (3.7)	11 (2.6)	328 (3.1)
Graduate studies/degree	618	3,333	7	1 (1.3)	4 (1.4)	28 (4.2)	52 (3.5)	15 (2.3)	340 (3.3)
Nation									
Still in high school	973	8,266	4	16 (1.8)	36 (2.2)	37 (2.6)	11 (1.9)	0† (0.5)	271 (2.0)
0 to 8 years	2,187	18,356	10	75 (1.7)	20 (1.4)	4 (0.9)	0† (0.3)	0† (0.0)	177 (2.6)
9 to 12 years	3,311	24,982	13	42 (1.4)	38 (1.1)	17 (1.0)	2 (0.4)	0† (0.1)	231 (1.5)
High school	9,107	51,290	27	16 (0.8)	36 (1.3)	37 (1.7)	10 (0.9)	1 (0.2)	270 (1.1)
GED	1,062	7,224	4	14 (1.6)	39 (2.5)	39 (2.8)	7 (1.2)	0† (0.6)	268 (1.8)
Some postsecondary	6,587	39,634	21	8 (0.5)	23 (0.8)	45 (0.9)	22 (0.8)	3 (0.3)	294 (1.0)
Two year degree	1,033	6,831	4	4 (1.1)	19 (2.3)	41 (2.9)	32 (2.5)	4 (0.9)	308 (2.4)
Four year degree	2,534	17,804	9	4 (0.7)	11 (1.2)	35 (2.0)	40 (1.5)	10 (1.3)	322 (1.6)
Graduate studies/degree	2,253	16,306	9	2 (0.4)	7 (1.0)	28 (1.4)	47 (1.8)	16 (1.1)	336 (1.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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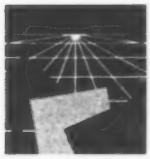

OHIO TABLE 2.1D

Document Literacy Levels and Average Proficiencies, by Level of Education in the United States: Results for Ohio, the Midwest, and the Nation

LEVEL OF EDUCATION ATTAINED IN THE UNITED STATES				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Still in high school	70	370	4	13 (8.2)	29 (9.6)	39 (8.9)	17 (5.7)	2 (2.6)	281 (7.0)
0 to 8 years	51	489	6	64 (9.7)	35 (9.6)	1 (0.9)	0† (0.0)	0† (0.0)	204 (9.1)
9 to 12 years	185	1,267	15	43 (4.6)	41 (5.6)	14 (5.3)	2 (1.7)	0† (0.0)	230 (5.2)
High school	468	2,742	33	15 (3.2)	38 (4.4)	35 (3.2)	12 (2.3)	0† (0.3)	271 (3.8)
GED	45	245	3	14 (5.3)	39 (10.8)	42 (9.0)	4 (3.5)	0† (0.5)	271 (6.7)
Some postsecondary	424	1,638	20	5 (1.5)	23 (3.1)	46 (2.9)	23 (3.4)	3 (1.3)	298 (2.9)
Two year degree	73	252	3	2 (1.2)	15 (5.0)	46 (7.0)	32 (6.8)	6 (3.6)	313 (6.5)
Four year degree	137	734	9	4 (2.2)	17 (8.3)	35 (7.6)	36 (7.0)	8 (2.8)	314 (7.3)
Graduate studies/degree	114	523	6	1 (0.5)	5 (4.8)	31 (8.2)	51 (8.0)	13 (4.6)	336 (6.3)
Midwest									
Still in high school	301	2,343	5	8 (2.9)	31 (4.0)	44 (4.8)	16 (2.7)	1 (0.9)	286 (3.8)
0 to 8 years	412	3,558	8	70 (6.4)	28 (6.0)	2 (1.2)	0† (0.0)	0† (0.0)	191 (6.1)
9 to 12 years	865	5,820	13	43 (3.3)	39 (2.8)	15 (1.9)	3 (1.1)	0† (0.5)	230 (3.2)
High school	1,992	13,306	29	16 (1.1)	39 (2.3)	35 (2.2)	9 (0.7)	0† (0.1)	269 (1.5)
GED	314	1,594	4	16 (4.0)	40 (6.3)	37 (5.8)	7 (3.9)	0† (0.1)	267 (5.0)
Some postsecondary	1,983	10,149	22	7 (1.2)	26 (2.0)	44 (2.3)	21 (2.0)	2 (0.8)	292 (2.4)
Two year degree	300	1,395	3	5 (3.0)	20 (4.7)	43 (4.8)	27 (4.1)	5 (2.3)	303 (4.7)
Four year degree	704	3,816	8	2 (0.9)	12 (1.9)	37 (3.6)	39 (3.0)	9 (1.7)	321 (2.5)
Graduate studies/degree	618	3,333	7	3 (1.1)	8 (1.9)	33 (3.3)	45 (3.8)	11 (2.7)	329 (2.7)
Nation									
Still in high school	973	8,268	4	15 (1.5)	35 (2.3)	38 (2.6)	12 (1.5)	1 (0.6)	274 (1.9)
0 to 8 years	2,167	18,356	10	79 (1.7)	18 (1.6)	3 (0.8)	0† (0.1)	0† (0.0)	170 (2.4)
9 to 12 years	3,311	24,982	13	46 (1.7)	37 (1.6)	15 (1.3)	2 (0.4)	0† (0.1)	227 (1.8)
High school	6,107	51,290	27	20 (0.8)	38 (1.0)	33 (1.1)	9 (0.6)	1 (0.2)	264 (1.1)
GED	1,062	7,224	4	17 (2.0)	42 (2.7)	34 (2.3)	7 (1.1)	0† (0.5)	264 (2.2)
Some postsecondary	6,587	39,634	21	9 (0.4)	27 (0.8)	42 (1.0)	20 (0.8)	2 (0.4)	290 (0.9)
Two year degree	1,033	6,831	4	6 (1.4)	23 (2.0)	43 (2.6)	25 (2.7)	3 (0.9)	299 (2.6)
Four year degree	2,534	17,804	9	4 (0.5)	15 (1.3)	37 (1.5)	36 (1.2)	8 (1.2)	314 (1.4)
Graduate studies/degree	2,253	16,306	9	3 (0.6)	10 (0.9)	34 (1.8)	41 (1.9)	12 (1.1)	326 (1.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 2.1Q

Quantitative Literacy Levels and Average Proficiencies, by Level of Education in the United States: Results for Ohio, the Midwest, and the Nation

LEVEL OF EDUCATION ATTAINED IN THE UNITED STATES				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Still in high school	70	370	4	17 (7.1)	34 (11.3)	33 (7.7)	14 (6.6)	2 (2.3)	273 (7.2)
0 to 8 years	51	489	6	63 (9.5)	32 (9.6)	5 (7.1)	0† (0.0)	0† (0.0)	203 (12.9)
9 to 12 years	185	1,267	15	42 (6.0)	39 (6.5)	18 (3.3)	1 (1.0)	0† (0.0)	229 (4.8)
High school	468	2,742	33	14 (2.9)	31 (3.7)	39 (4.8)	15 (2.3)	1 (0.7)	278 (4.2)
GED	45	245	3	8 (6.3)	34 (9.7)	48 (8.7)	10 (5.2)	0† (0.5)	280 (9.4)
Some postsecondary	424	1,638	20	5 (1.5)	22 (3.0)	42 (3.5)	25 (3.2)	5 (1.5)	302 (2.8)
Two year degree	73	252	3	2 (1.4)	10 (4.1)	42 (9.7)	36 (9.1)	9 (4.9)	322 (5.9)
Four year degree	137	734	9	5 (5.0)	13 (4.9)	33 (5.0)	40 (6.9)	9 (2.6)	318 (6.3)
Graduate studies/degree	114	523	6	2 (2.0)	4 (3.9)	22 (5.9)	50 (9.2)	21 (7.9)	343 (6.7)
Midwest									
Still in high school	301	2,343	5	11 (3.4)	34 (5.9)	39 (4.9)	17 (3.7)	1 (0.5)	282 (4.5)
0 to 8 years	412	3,558	8	64 (6.0)	29 (4.8)	7 (2.9)	0† (0.5)	0† (0.0)	194 (7.2)
9 to 12 years	865	5,820	13	41 (3.8)	36 (4.8)	20 (3.4)	3 (1.0)	0† (0.5)	232 (3.9)
High school	1,992	13,306	29	14 (1.4)	32 (2.2)	40 (2.2)	13 (1.4)	1 (0.3)	277 (1.5)
GED	314	1,594	4	14 (4.0)	36 (6.8)	40 (7.7)	10 (3.3)	0† (0.2)	272 (5.5)
Some postsecondary	1,983	10,149	22	7 (1.2)	22 (2.4)	41 (2.1)	26 (2.4)	4 (0.8)	300 (2.7)
Two year degree	300	1,395	3	3 (1.6)	19 (3.8)	41 (4.8)	30 (4.7)	7 (2.7)	310 (4.9)
Four year degree	704	3,816	8	2 (1.1)	10 (2.1)	33 (2.7)	43 (3.8)	13 (2.8)	329 (2.5)
Graduate studies/degree	618	3,333	7	2 (1.2)	7 (2.1)	28 (3.5)	46 (4.6)	17 (2.8)	336 (2.8)
Nation									
Still in high school	973	8,268	4	19 (1.7)	35 (3.0)	32 (2.3)	12 (2.0)	1 (0.9)	269 (2.2)
0 to 8 years	2,167	18,356	10	76 (2.0)	18 (1.8)	5 (1.1)	1 (0.3)	0† (0.2)	169 (3.1)
9 to 12 years	3,311	24,982	13	45 (1.6)	34 (1.6)	17 (1.3)	3 (0.6)	0† (0.1)	227 (1.7)
High school	6,107	51,290	27	18 (0.8)	33 (1.1)	37 (1.1)	12 (0.5)	1 (0.2)	270 (1.1)
GED	1,082	7,224	4	16 (2.0)	38 (2.5)	35 (2.5)	10 (1.4)	1 (0.5)	268 (2.7)
Some postsecondary	6,587	39,634	21	8 (0.6)	23 (1.2)	42 (1.4)	23 (1.3)	4 (0.4)	295 (1.4)
Two year degree	1,033	6,831	4	4 (0.8)	19 (2.0)	43 (2.0)	29 (2.7)	5 (1.3)	307 (2.8)
Four year degree	2,534	17,804	9	4 (0.5)	12 (1.0)	35 (1.4)	38 (1.4)	12 (1.1)	322 (1.2)
Graduate studies/degree	2,253	16,306	9	2 (0.5)	9 (0.8)	30 (1.4)	42 (1.7)	17 (1.4)	334 (1.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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for example, between being able to identify a piece of information in a short news article and being able to compare and contrast information in lengthy text.

Some high school graduates in the state, region, and nation did poorly in the assessment. Across the literacy scales, 12 to 15 percent of the adults in Ohio whose highest level of education was a high school diploma performed in the Level 1 range, and another 31 to 38 percent performed in Level 2. Conversely, just 12 to 16 percent of the state's high school graduates reached the two highest levels on each scale. High school graduates and GED recipients performed similarly in the assessment; their average scores on each literacy scale, and their distributions of performance across the literacy levels, were highly comparable. Although there appear to be differences between these two groups in Ohio, these differences are not statistically significant.

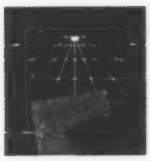
Adults who had completed a two-year college degree performed significantly better than those whose highest level of education was a high school diploma. Two-year college graduates had an average prose score of 320, a document score of 313, and a quantitative score of 322 — all in the Level 3 range. Four-year college graduates had similar scores, achieving an average prose score of 317, an average document score of 314, and an average quantitative score of 318.

These results clearly indicate that education and literacy skills are interconnected. One can infer that education strengthens an individual's ability to read and use various types of materials. It is also true, however, that those with higher proficiencies are more likely to extend their schooling.

Average years of schooling completed by various population groups

A question that arises from these data is whether the differences in literacy proficiency among certain groups in the population (as seen in Section I) can be explained, at least in part, by differences in educational attainment. In other words, do the groups that demonstrate lower proficiencies also report having had fewer years of schooling? To address such questions, it was necessary to calculate the average years of schooling completed by survey respondents, based on the highest level of education they reported having achieved in this country. This new variable offers a way to compare the educational attainments of adults in groups defined by sex, age, race/ethnicity, and other characteristics of interest.

Adults in Ohio completed an average of 12.6 years of schooling, or slightly more than a high school diploma (Table 2.2). Males and females had completed comparable years of schooling (12.7 and 12.5 years, respectively). As noted



OHIO TABLE 2.2

Average Years of Schooling Completed in the United States by Various Population Groups: Results for Ohio, the Midwest, and the Nation

	Average years of schooling completed by adults in . . .					
	Ohio		**Midwest**		**Nation**	
		(SE)		**(SE)**		**(SE)**
Total	12.6	(0.0)	12.5	(0.1)	12.4	(0.0)
Sex						
Male	12.7	(0.1)	12.7	(0.1)	12.5	(0.0)
Female	12.5	(0.1)	12.4	(0.1)	12.3	(0.0)
Age						
16 to 18	12.7	(0.1)	12.5	(0.1)	12.3	(0.0)
19 to 24	13.0	(0.2)	13.1	(0.1)	12.9	(0.0)
25 to 39	13.1	(0.2)	13.2	(0.1)	13.1	(0.1)
40 to 54	12.9	(0.2)	13.0	(0.1)	13.0	(0.1)
55 to 64	11.8	(0.2)	12.2	(0.2)	11.8	(0.1)
65 and older	11.3	(0.4)	11.0	(0.1)	10.7	(0.1)
Race/Ethnicity						
White	12.6	(0.0)	12.7	(0.1)	12.8	(0.0)
African American	12.3	(0.2)	11.8	(0.1)	11.6	(0.1)
Latino (all)	***	(****)	10.1	(0.3)	10.2	(0.1)
Asian/Pacific Islander	***	(****)	13.2	(0.8)	13.0	(0.3)
Other	***	(****)	11.7	(0.7)	11.3	(0.3)
Country of Birth						
United States or U.S. territory	12.6	(0.0)	12.6	(0.0)	12.6	(0.0)
Other country	***	(****)	8.2	(0.6)	8.7	(0.2)
Parents' Highest Level of Education						
0 to 12 years	11.6	(0.2)	11.4	(0.1)	11.1	(0.0)
High school	12.6	(0.1)	12.8	(0.1)	12.9	(0.0)
GED	13.8	(0.3)	12.9	(0.1)	12.7	(0.1)
Some postsecondary	13.6	(0.2)	13.6	(0.1)	13.6	(0.1)
Four year deg. or more	14.3	(0.2)	14.5	(0.1)	14.6	(0.0)

(SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

earlier, however, the differences in educational attainment between men and women in the national sample are larger among older adults and are diminished among younger adults — as are the differences in literacy proficiency.

The years of schooling completed by adults in various racial/ethnic groups tend to parallel the proficiency differences discussed in Section I. Among Ohio residents, the average number of years of schooling attained by White (13 years), African American (12 years), and Latino adults (12 years) are not significantly different. In the Midwest and national populations, however, African American and Latino adults reported significantly fewer years of schooling, on average, than White adults. For example, White adults in the Midwest reported an average of 13 years of schooling, compared with 12 years for African American individuals and 10 years for Latino individuals.

The differences in years of schooling among the various age groups in Ohio are noteworthy. Though not all the differences are statistically significant, average years of schooling tend to increase from the youngest age group to the middle age groups, and then to decline across the older groups. The most striking difference is found between the oldest age group and the younger groups. Adults age 65 and older tend to have completed about 11 years of schooling, less than a high school diploma, compared to roughly 13 years for adults age 25 to 39. As seen in Section I, the prose, document, and quantitative proficiencies of older adults were also substantially lower than those of adults in the other age groups.

Given the strong connection between adults' levels of education and their literacy skills, another question of interest concerns the intergenerational nature of education. The survey data show that adults' academic attainments are, in fact, related to those of their parents. Ohio respondents whose parents had four-year degrees had completed an average of 14 years of schooling, compared with 13 years for respondents whose parents had ended their education upon receiving high school diplomas. Ohio respondents with parents who had not finished high school reported an average of 12 years of schooling. The regional and national results are similar.

Thus, the more education adults' parents had completed, the more education they themselves were likely to have completed — and the higher their literacy proficiencies were likely to be. Still, respondents' own level of education are better predictors of their literacy skills than their parents' levels of education.[2]

[2] I.S. Kirsch, A. Jungeblut, L. Jenkins, and A. Kolstad. op. cit. pp. 28-9.

Level of education attained before coming to the United States

Because there are so many immigrants in this country, and because many of these individuals were educated in their native countries, foreign-born survey respondents were asked to indicate the highest level of education they had completed before coming to the United States.

The number of foreign-born adults in Ohio is too small to permit analyses of responses to this question. In the national population, 8 percent of the foreign-born adults reported that their highest level of education before coming to the United States was primary school; 26 percent said it was elementary school; 31 percent said it was secondary school; 3 percent said it was vocational school;[3] and 14 percent said it was college or university. Fourteen percent of the foreign-born residents of this country said they did not complete any schooling before coming here.

Given the relatively small number of foreign-born adults in Ohio, it is not possible to compare the literacy skills of those who had attained various levels of schooling before coming to this country. In the nation as a whole, though, foreign-born adults who had completed no schooling in their native country and those who had received a college or university degree before coming to this country had higher average proficiencies than adults who had completed primary, elementary, secondary, or vocational school abroad.

It is interesting to compare the levels of education attained abroad by foreign-born adults who have lived in this country for varying lengths of time. The numbers of foreign-born Ohio residents are too small to support such analyses. Nationwide, however, about 80 percent of the foreign-born adults who have lived in this country for more than a decade reported having completed some schooling before coming (Table 2.4). One-quarter had finished secondary school abroad, and 10 percent had completed a college or university education before moving to the United States.

Foreign-born adults who have lived in this country for a decade or less — that is, from six to ten years, or from one to five years — were more likely than longer-term residents to have completed some education before coming. Nationwide, virtually all (95 percent) of the foreign-born adults who have lived in this country for between six and 10 years said they had completed some

[3] In this report, the term "vocational" refers to vocational, technical, or business programs at the postsecondary level.

OHIO TABLE 2.3

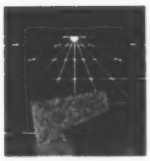
Average Literacy Proficiencies of Foreign-born Adults, by Highest Level of Education Attained Before Coming to the U.S.

LEVEL OF EDUCATION ATTAINED BEFORE COMING TO THE U.S.	n	WGT N (/1000)	PCT	Average proficiency of adults on each literacy scale: Prose PROF (SE)	Document PROF (SE)	Quantitative PROF (SE)
Ohio						
None	7	31	20	*** (****)	*** (****)	*** (****)
Primary	2	3	2	*** (****)	*** (****)	*** (****)
Elementary	3	19	12	*** (****)	*** (****)	*** (****)
Secondary	6	55	35	*** (****)	*** (****)	*** (****)
Vocational	2	17	11	*** (****)	*** (****)	*** (****)
College/university	7	32	20	*** (****)	*** (****)	*** (****)
Other	0	0	0	*** (****)	*** (****)	*** (****)
Midwest						
None	43	250	17	*** (****)	*** (****)	*** (****)
Primary	25	98	6	*** (****)	*** (****)	*** (****)
Elementary	87	414	27	175 (8.6)!	177 (9.3)!	179 (11.9)!
Secondary	83	491	33	230 (14.1)	238 (17.4)	241 (14.2)
Vocational	10	43	3	*** (****)	*** (****)	*** (****)
College/university	44	187	12	*** (****)	*** (****)	*** (****)
Other	6	26	2	*** (****)	*** (****)	*** (****)
Nation						
None	344	2,660	14	253 (5.4)	245 (5.1)	244 (6.3)
Primary	254	1,563	8	182 (8.3)	179 (8.0)	174 (8.6)
Elementary	712	4,836	26	169 (4.7)	169 (5.0)	168 (6.2)
Secondary	771	5,713	31	209 (4.1)	210 (3.8)	216 (3.8)
Vocational	93	613	3	225 (8.9)	226 (9.2)	232 (9.8)
College/university	387	2,680	14	257 (4.9)	259 (5.2)	270 (4.8)
Other	54	421	2	267 (13.1)	267 (11.3)	280 (13.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.



OHIO TABLE 2.4

Highest Level of Education Attained Before Coming to the U.S., by Years Lived in the U.S.: Results for Ohio, the Midwest, and the Nation

YEARS LIVED IN THE U. S.				Percentage of adults who attained each level of education					
				None	Primary & Elementary	Secondary	Vocational	College/ university	Other
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Ohio									
1 to 5 years	5	21	14	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
6 to 10 years	2	10	7	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
More than 10 years	20	125	80	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Midwest									
1 to 5 years	62	278	18	1 (0.5)	26 (5.5)	52 (7.2)	7 (4.0)	14 (4.4)	0† (0.1)
6 to 10 years	56	294	19	17 (14.7)	33 (9.7)	30 (9.9)	0† (0.0)	13 (6.0)	6 (5.2)
More than 10 years	180	938	62	21 (4.4)	36 (8.5)	27 (3.7)	3 (1.6)	12 (5.7)	1 (0.5)
Nation									
1 to 5 years	568	3,998	22	4 (1.1)	25 (2.2)	39 (3.0)	3 (0.7)	25 (2.6)	3 (1.1)
6 to 10 years	481	3,181	17	5 (1.5)	35 (2.6)	40 (3.0)	4 (1.0)	15 (2.0)	3 (1.1)
More than 10 years	1,556	11,207	61	21 (1.5)	38 (1.9)	25 (1.6)	3 (0.6)	10 (1.0)	2 (0.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

schooling before coming. Forty percent had attended secondary school, and 15 percent had attended a college or university. Among foreign-born adults who have lived in the United States for five years or less, 96 percent had acquired some schooling before coming, 39 percent had completed secondary school, and one-quarter had completed a college or university education.

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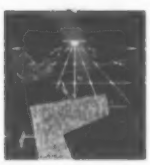
Main reason for stopping schooling

In addition to gathering information about the educational attainments of native-born and foreign-born adults, the survey collected data on the experiences of adults with limited formal schooling. Adults who had not received a high school diploma — that is, who reported having zero to eight or nine to 12 years of schooling, or who had received a GED or high school equivalency — were asked to indicate the main reason why they stopped their schooling.

Ten percent of the school dropouts in Ohio reported that financial problems were their main reason for leaving school, and another 23 percent said their primary reason was to go to work or join the military (Table 2.5). Ten percent of the dropouts said they left school because of pregnancy. Eighteen percent reported dropping out because they lost interest or had behavior problems at school, and another 3 percent said they left primarily because of



OHIO TABLE 2.5

Average Literacy Proficiencies of School Dropouts, by Main Reason for Stopping Schooling: Results for Ohio

MAIN REASON FOR STOPPING SCHOOLING				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Main reason for stopping schooling						
Financial problems	20	199	10	*** (****)	*** (****)	*** (****)
Went to work or into the military	49	441	23	222 (6.9)	216 (6.6)	229 (7.8)
Pregnancy	42	187	10	*** (****)	*** (****)	*** (****)
Lost interest or had behavior problems in school	49	358	18	241 (6.7)	238 (8.9)	239 (10.0)
Academic problems at school	9	55	3	*** (****)	*** (****)	*** (****)
Family or personal problems	51	321	16	248 (6.9)	238 (6.8)	237 (7.1)
Other	55	385	20	228 (10.6)	229 (11.5)	225 (10.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

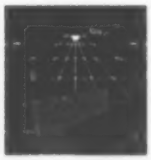
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

academic problems. Sixteen percent said their main reason for leaving school was a family or personal problem. Twenty percent of the respondents cited other reasons for leaving.

School dropouts who reported that their main reason for leaving school was a family or personal problem had higher average prose proficiency (248) than those who cited leaving to work or to enter the military (222). A similar pattern appears on the quantitative scale.

An examination of the age distribution of respondents who cited various reasons for leaving school reveals some interesting patterns (Table 2.6). For example, those who said they left school primarily because they went to work or into the military were most likely to be age 65 or older: 49 percent of those who cited this as their main reason were in this age group, compared with only 0 to 19 percent of those in the other age groups.



OHIO TABLE 2.6

Among School Dropouts, Main Reason for Stopping Schooling, by Age: Results for Ohio

MAIN REASON FOR STOPPING SCHOOLING				Percentage of adults in each age group					
				16 to 18	19 to 24	25 to 39	40 to 54	55 to 64	65 and older
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Main reason for stopping schooling									
Financial problems	20	199	10	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Work, military	49	441	23	0† (0.0)	2 (1.7)	12 (4.0)	18 (5.8)	19 (5.6)	49 (7.7)
Pregnancy	42	187	10	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Lost interest, behavior problems	49	358	18	2 (1.9)	10 (3.7)	41 (8.6)	18 (5.4)	4 (3.1)	25 (9.8)
Academic problems at school	9	55	3	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Family, personal problems	51	321	16	1 (1.2)	11 (5.0)	30 (7.4)	18 (6.0)	21 (6.2)	19 (6.6)
Other	55	385	20	4 (2.4)	9 (3.6)	25 (10.1)	21 (7.0)	11 (2.7)	29 (8.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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Participation in a GED or high school equivalency program

Thirty percent of the school dropouts in Ohio said they had studied for a GED or high school equivalency, and 41 percent of them reported they had actually received their certificate (Table 2.7). Nationwide, a similar proportion (30 percent) of the school dropouts reported having studied for a GED or high school equivalency, and half (49 percent) said they had received it.

Across the literacy scales, the average scores of school dropouts in Ohio who had studied for a GED or high school equivalency certificate were 41 to 43 points higher than those of dropouts who had not studied for the certificate. Ohio residents who had studied for and received the GED had average proficiencies that were 22 to 36 points higher than those of individuals who had studied for but not completed their certificate.

The vast majority of the GED program participants in Ohio (84 percent) were age 25 or older. Nearly half (47 percent) were between the ages of 25 and 39, another 30 percent were in the 40 to 54 age group, and 7 percent were 55 or older. Sixteen percent were below age 25 (Table 2.8).

The survey results do not provide insight into adults' reasons or motivations for participating in programs such as the GED. Still, one plausible interpretation is that after a few years in the labor force, young school dropouts discover the importance of a high school diploma or an equivalent credential in obtaining a job and advancing in the workplace.

OHIO TABLE 2.7

Average Literacy Proficiencies of Dropouts, by Participation in a GED Program: Results for Ohio, the Midwest, and the Nation

STUDIED FOR, RECEIVED A GED OR HIGH SCHOOL EQUIVALENCY				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Ever studied for a GED?						
Ohio						
Yes	109	596	30	262 (3.5)	258 (3.6)	259 (6.2)
No	168	1,390	70	221 (6.6)	216 (6.1)	216 (7.5)
Midwest						
Yes	632	3,124	29	260 (3.5)	256 (4.5)	257 (5.1)
No	945	7,761	71	216 (3.4)	210 (3.4)	213 (4.2)
Nation						
Yes	2,335	14,777	30	254 (1.3)	251 (1.7)	252 (1.8)
No	4,118	35,062	70	201 (1.9)	195 (1.9)	196 (2.1)
If yes, did you receive it?						
Ohio						
Yes	45	245	41	276 (6.5)	271 (6.7)	280 (9.4)
No	64	351	59	252 (5.6)	249 (5.5)	244 (7.3)
Midwest						
Yes	314	1,594	51	271 (4.6)	267 (5.0)	272 (5.5)
No	318	1,530	49	249 (4.3)	245 (5.6)	242 (7.2)
Nation						
Yes	1,062	7,224	49	268 (1.8)	264 (2.2)	268 (2.7)
No	1,273	7,552	51	241 (2.1)	239 (2.4)	236 (2.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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OHIO TABLE 2.8

Among School Dropouts, Participation in a GED Program, by Age: Results for Ohio

STUDIED FOR, RECEIVED A GED OR HIGH SCHOOL EQUIVALENCY				Percentage of adults in each age group					
				16 to 18	19 to 24	25 to 39	40 to 54	55 to 64	65 and older
	n	WGT N (/1000)	POT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Ever studied for a GED?									
Yes	109	596	30	3 (2.4)	13 (4.3)	47 (5.8)	30 (4.8)	5 (2.0)	2 (1.3)
No	168	1,390	70	1 (0.5)	5 (1.1)	16 (3.0)	15 (2.4)	16 (2.2)	47 (4.0)
If yes, did you receive it?									
Yes	45	245	41	0† (0.0)	13 (5.0)	39 (6.3)	36 (8.5)	8 (4.1)	4 (2.7)
No	64	351	59	5 (4.0)	14 (5.8)	52 (9.9)	26 (6.4)	2 (1.6)	1 (1.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Place where GED was received

Decision makers in Ohio were interested in knowing where GED recipients in the state had received their certificates — in or out of the state. Accordingly, one of the state-specific questions asked adults who indicated that they did not have a high school diploma if and where they attained their high school equivalence certificate or GED. The results should be interpreted with caution, however, because the percentage of adults who did not answer this question was high.

Fourteen percent of the Ohio survey participants who responded to this question reported that they had received a GED in Ohio, and 9 percent indicated that they had received a GED outside the state (Table 2.9). The remaining 77 percent reported they had not received a GED.

OHIO TABLE 2.9

Literacy Levels and Average Proficiencies of GED Recipients, by Place Where GED Was Received: Results for Ohio

PLACE WHERE GED WAS RECEIVED				Percentage of adults in each literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose									
In Ohio	46	216	14	11 (6.7)	42 (12.1)	41 (12.1)	6 (3.0)	0† (0.0)	271 (8.5)
Outside Ohio	24	130	9	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Did not receive a GED	212	1,152	77	26 (4.0)	41 (5.8)	28 (5.9)	5 (1.9)	1 (0.9)	253 (4.4)
Document									
In Ohio	46	216	14	14 (5.9)	42 (9.9)	38 (10.0)	5 (4.7)	0† (1.0)	268 (7.8)
Outside Ohio	24	130	9	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Did not receive a GED	212	1,152	77	28 (4.2)	41 (5.5)	23 (5.7)	6 (2.0)	1 (0.9)	252 (5.6)
Quantitative									
In Ohio	46	216	14	16 (9.4)	43 (10.9)	34 (9.5)	7 (5.3)	0† (0.0)	264 (8.9)
Outside Ohio	24	130	9	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Did not receive a GED	212	1,152	77	29 (4.0)	42 (6.9)	24 (4.4)	5 (2.6)	1 (0.5)	248 (4.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Current educational enrollment

Survey respondents were asked to indicate whether or not they were enrolled in school or college, either full or part time. Ten percent of the adults in Ohio and similar percentages in the Midwest and nationwide responded that they were currently enrolled in school or college (Table 2.10).

These individuals demonstrated significantly higher average prose, document, and quantitative proficiencies than respondents who were not currently enrolled in an educational program. On the prose scale, for example, the average proficiency of students in Ohio (306) was 28 points higher than that of non-students (278). On the document scale, the gap was 31 points (303, compared with 272), and on the quantitative scale, it was 24 points (302, compared with 278). Similar patterns are seen in the regional and national results.

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OHIO TABLE 2.10

Average Literacy Proficiencies, by Current Educational Enrollment and Goals: Results for Ohio, the Midwest, and the Nation

CURRENT ENROLLMENT IN SCHOOL OR COLLEGE, AND EDUCATIONAL GOAL	n	WGT N (/1000)	PCT	Average proficiency of adults on each literacy scale: Prose PROF (SE)	Document PROF (SE)	Quantitative PROF (SE)
Currently enrolled in school or college?						
Ohio						
Yes	171	777	10	306 (4.2)	303 (3.4)	302 (4.1)
No	1,320	7,063	90	278 (2.6)	272 (2.7)	278 (2.7)
Midwest						
Yes	794	3,845	9	308 (2.9)	304 (3.2)	305 (3.0)
No	6,097	38,797	91	276 (1.0)	270 (1.2)	277 (1.7)
Nation						
Yes	2,850	19,316	11	303 (1.7)	299 (1.4)	299 (1.5)
No	21,009	162,012	89	269 (0.6)	263 (0.7)	268 (0.8)
If yes, what is your goal?						
Nation						
High School Diploma/GED	258	1,849	10	242 (4.7)	241 (5.0)	233 (4.1)
Vocational/trade	277	1,891	10	276 (6.2)	276 (6.2)	267 (5.0)
Two year degree	392	2,435	13	299 (3.9)	296 (3.3)	295 (3.7)
Four year degree	1,074	7,226	38	316 (2.5)	313 (2.2)	312 (2.3)
Graduate degree	511	3,649	19	332 (2.7)	326 (3.1)	331 (2.6)
Other	187	1,285	7	293 (7.1)	288 (6.0)	293 (6.0)
None	109	669	4	290 (10.5)	284 (10.3)	290 (9.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

When respondents who were enrolled in school or college were asked what diploma, certificate, or other credential they expected to earn, their answers varied considerably. The sample sizes for Ohio are relatively small, so the national results provide a firmer basis for discussion.

Ten percent of the adults who were enrolled in an educational program said they expected to earn a high school diploma or equivalency, and an equivalent percentage said they were pursuing a vocational, trade, or business credential. About 13 percent expected to receive an associate's degree, 38 percent were pursuing a four-year college degree, and 19 percent were working toward a master's, Ph.D., M.D., or other advanced degree. Seven percent were pursuing some other educational goal, and about 4 percent said they had no expectation as to what credential they would earn.

It is not surprising to find that respondents who said they were working toward an advanced degree had the highest average proficiencies on each literacy scale (326 to 332), followed by those who were pursuing a four-year degree (312 to 316). Students who reported expecting to earn a high school diploma or equivalency demonstrated the lowest skills, on average (233 to 242).

Levels of education completed in Ohio

Decision makers in Ohio wished to collect data on the proportions of state residents who had attended various levels of schooling in the state. The results should be interpreted with caution, however, because the percentage of respondents who did not answer this question was relatively high (6 percent).

Almost two-thirds of the Ohio respondents (64 percent) reported having attended kindergarten through grade 3 in the state (Table 2.11). Similar proportions said they had attended grades 4 through 8 (65 percent) and grades 9 through 12 (65 percent) there. Thirteen percent had attended a vocational school or community college in Ohio, and 17 percent had attended a four-year college or university there.

Respondents who had attended elementary or secondary school in Ohio performed comparably in the assessment. Each of these groups demonstrated an average score of approximately 290 on the prose, document, and quantitative scales. Ohio residents who had attended a vocational school or community college in the state tended to have higher average prose (304), document (300), and quantitative (303) proficiencies than adults who had attended lower levels of schooling there, although not all the differences are significant. Adults who had attended a four-year college in the state had significantly higher average prose (330), document (325), and quantitative scores (330) than adults who had attended lower levels of schooling there.

OHIO TABLE 2.11

Literacy Levels and Average Proficiencies, by Levels of Education Completed in Ohio: Results for Ohio

LEVELS OF EDUCATION COMPLETED IN OHIO			Percentage of adults in each literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose								
K through grade 3	1,111	5,307	9 (1.4)	28 (1.9)	38 (2.7)	21 (1.9)	4 (0.9)	290 (3.0)
Grades 4 through 8	1,139	5,393	9 (1.7)	28 (1.8)	38 (2.6)	21 (1.9)	3 (0.8)	290 (3.1)
Grades 9 through 12	1,127	5,377	8 (1.2)	27 (2.1)	39 (2.9)	22 (2.2)	3 (0.8)	293 (2.8)
Vocational school	311	1,100	4 (1.7)	22 (3.0)	41 (4.4)	28 (3.7)	5 (2.4)	304 (4.0)
Four year college	323	1,377	1 (0.5)	7 (1.8)	36 (4.3)	45 (4.2)	11 (2.5)	330 (2.9)
None in state	166	756	17 (5.0)	22 (4.8)	37 (5.4)	20 (5.5)	4 (2.0)	285 (5.9)
Document								
K through grade 3	1,111	5,307	11 (1.8)	29 (1.9)	37 (1.5)	20 (2.2)	3 (0.9)	287 (3.2)
Grades 4 through 8	1,139	5,393	11 (1.9)	29 (1.9)	37 (1.6)	20 (2.2)	3 (0.8)	287 (3.3)
Grades 9 through 12	1,127	5,377	9 (1.5)	29 (2.0)	38 (1.5)	21 (2.5)	3 (0.8)	290 (3.0)
Vocational school	311	1,100	6 (2.1)	24 (3.7)	43 (3.5)	22 (3.3)	5 (2.4)	300 (3.7)
Four year college	323	1,377	1 (0.9)	8 (2.4)	41 (3.7)	41 (4.3)	9 (1.8)	325 (3.1)
None in state	166	756	20 (3.5)	30 (3.9)	29 (5.5)	18 (3.3)	3 (2.1)	276 (5.1)
Quantitative								
K through grade 3	1,111	5,307	12 (2.1)	26 (2.9)	36 (4.0)	22 (1.6)	4 (1.0)	289 (3.4)
Grades 4 through 8	1,139	5,393	12 (2.0)	26 (2.8)	36 (4.1)	22 (1.6)	4 (1.0)	289 (3.5)
Grades 9 through 12	1,127	5,377	10 (1.6)	25 (2.7)	37 (3.5)	23 (1.3)	4 (1.1)	293 (3.1)
Vocational school	311	1,100	6 (2.1)	22 (3.5)	39 (2.7)	26 (4.6)	7 (2.6)	303 (3.5)
Four year college	323	1,377	1 (0.7)	7 (3.1)	37 (6.1)	42 (3.6)	12 (2.1)	330 (3.6)
None in state	166	756	19 (3.6)	26 (5.8)	30 (5.8)	20 (4.1)	4 (2.0)	280 (5.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

The responses to this question were reanalyzed to determine the percentages and scores of adults in Ohio who had attended any level of education in the state and those who had not. In addition, the percentages and scores of individuals were analyzed by the highest level of education attained in the state (Table 2.12).

The results indicate that 89 percent of the adults in Ohio had completed some of their education in the state. On each literacy scale, their average proficiencies (287 to 291) are comparable to the scores of individuals who had not received any education in Ohio (276 to 285).

OHIO TABLE 2.12

Literacy Levels and Average Proficiencies, by Highest Level of Education Completed in Ohio: Results for Ohio

HIGHEST LEVEL OF EDUCATION COMPLETED IN OHIO				Percentage of adults in each literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose									
Attended in Ohio									
Yes	1,303	6,095	89	9 (1.4)	27 (1.7)	38 (2.5)	21 (2.1)	4 (0.8)	291 (2.9)
No	166	756	11	17 (5.0)	22 (4.8)	37 (5.4)	20 (5.5)	4 (2.0)	285 (5.9)
Highest level									
K through 3	6	36	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
4 through 8	76	366	6	33 (10.2)	37 (7.1)	27 (7.1)	3 (3.3)	1 (0.4)	246 (8.5)
9 through 12	632	3,384	56	11 (1.6)	35 (2.9)	39 (3.7)	13 (2.4)	1 (0.6)	278 (2.4)
Vocational school	266	931	15	5 (2.0)	26 (3.4)	43 (4.3)	24 (3.6)	3 (2.2)	298 (4.1)
Four year college	323	1,377	23	1 (0.5)	7 (1.8)	36 (4.3)	45 (4.2)	11 (2.5)	330 (2.9)
Document									
Attended in Ohio									
Yes	1,303	6,095	89	11 (1.7)	29 (1.8)	37 (1.6)	20 (2.3)	3 (0.7)	287 (3.0)
No	166	756	11	20 (3.5)	30 (3.9)	29 (5.5)	18 (3.3)	3 (2.1)	276 (5.1)
Highest level									
K through 3	6	36	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
4 through 8	76	366	6	38 (9.6)	36 (7.7)	22 (6.7)	4 (2.6)	1 (0.4)	240 (8.7)
9 through 12	632	3,384	56	13 (2.0)	37 (3.0)	36 (2.4)	14 (2.6)	1 (0.5)	276 (2.8)
Vocational school	266	931	15	7 (2.4)	27 (3.8)	45 (3.1)	18 (3.6)	3 (2.0)	293 (3.8)
Four year college	323	1,377	23	1 (0.9)	8 (2.4)	41 (3.7)	41 (4.3)	9 (1.8)	325 (3.1)
Quantitative									
Attended in Ohio									
Yes	1,303	6,095	89	11 (1.8)	26 (2.6)	36 (3.3)	22 (1.0)	4 (1.0)	290 (3.3)
No	166	756	11	19 (3.6)	26 (5.8)	30 (5.8)	20 (4.1)	4 (2.0)	280 (5.5)
Highest level									
K through 3	6	36	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
4 through 8	76	366	6	36 (9.7)	41 (8.4)	18 (5.8)	4 (2.5)	0† (0.5)	239 (9.6)
9 through 12	632	3,384	56	14 (2.1)	32 (3.2)	36 (3.2)	16 (1.5)	2 (1.0)	278 (3.3)
Vocational school	266	931	15	7 (2.4)	25 (4.1)	41 (3.7)	22 (4.1)	4 (1.9)	296 (3.9)
Four year college	323	1,377	23	1 (0.7)	7 (3.1)	37 (6.1)	42 (3.6)	12 (2.1)	330 (3.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Among Ohio residents who had completed some schooling in the state, those whose highest level of education there was kindergarten through grade 3 were quite rare (1 percent). For 6 percent, grades 4 through 8 were the highest level completed there; for a little more half (56 percent), grades 9 through 12 were the highest level; for 15 percent, vocational school or community college was the highest level; and for 23 percent, four-year college was the highest level.

In general, the higher the level of education attained in Ohio, the higher respondents' proficiencies. On the document scale, for example, adults whose highest level of education in Ohio was a four-year degree had an average score of 325, roughly 85 points higher than the average score of individuals whose highest level of education in the state was the eighth grade.

In reviewing these results, however, readers should recognize that they reflect only the highest level of education completed within the state, not the highest level completed anywhere. Further, these analyses do not capture the varied educational experiences of adults within each category examined. Among individuals whose highest level of education in Ohio was college, for example, adults who completed elementary school in Ohio, attended high school in another state, and then returned to college in Ohio are not differentiated from those who attended elementary school through college in the state; nor are they differentiated from those who completed all their precollegiate education elsewhere before coming to Ohio to attend college.

Place where high school diploma was received

Decision makers in Ohio were interested in knowing what percentage of the adults in the state had been educated in public and private schools in Ohio or in another state. They also wished to compare the literacy skills of these different groups. Accordingly, one of the state-specific questions asked respondents where they received their high school diplomas: a public school in Ohio, a public school outside Ohio, a private school in Ohio, or a private school outside Ohio. The results should be interpreted with caution, however, because the percentage of Ohio survey participants who did not respond to this question was relatively high (6 percent).

Among those who responded to this question, 57 percent indicated that they had received a high school diploma from a public school in Ohio, and 6 percent had received a diploma from a private school in the state (Table 2.13). Eleven percent had received a high school diploma from a public school outside Ohio, while just 1 percent had received it from a private school outside the state. Adults' average proficiencies did not vary according to the type or location of the school where they had received the diploma. Though there appear to be some differences among the groups, they are not statistically significant. In all cases, however, adults who had received a high school diploma from any of the types of schools listed outperformed respondents who said they did not receive a diploma.

OHIO TABLE 2.13

Literacy Levels and Average Proficiencies, by Place Where High School Diploma Was Received: Results for Ohio

PLACE WHERE HIGH SCHOOL DIPLOMA WAS RECEIVED				Percentage of adults in each literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose									
Public school in Ohio	833	3,909	57	6 (1.6)	24 (2.3)	40 (3.6)	26 (2.6)	4 (1.2)	299 (3.4)
Public school outside Ohio	182	718	11	7 (3.1)	18 (2.7)	43 (5.4)	27 (5.3)	5 (1.9)	303 (3.7)
Private school in Ohio	108	440	6	4 (2.2)	18 (7.3)	41 (9.3)	30 (5.6)	7 (2.4)	310 (4.4)
Private school outside Ohio	30	101	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Did not receive high school diploma	314	1,666	24	23 (2.6)	41 (4.5)	31 (3.9)	5 (1.6)	0† (0.6)	257 (2.1)
Document									
Public school in Ohio	833	3,909	57	7 (2.1)	25 (1.7)	40 (1.3)	24 (2.6)	3 (0.7)	296 (3.8)
Public school outside Ohio	182	718	11	10 (3.1)	24 (3.4)	37 (5.8)	23 (4.9)	5 (2.1)	295 (3.7)
Private school in Ohio	108	440	6	3 (2.2)	24 (7.1)	43 (7.7)	25 (7.1)	5 (3.3)	304 (3.8)
Private school outside Ohio	30	101	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Did not receive high school diploma	314	1,666	24	26 (2.8)	41 (4.6)	26 (3.4)	6 (1.7)	0† (0.7)	255 (2.8)
Quantitative									
Public school in Ohio	833	3,909	57	8 (1.8)	22 (2.8)	39 (4.3)	26 (1.4)	6 (1.2)	301 (3.6)
Public school outside Ohio	182	718	11	9 (3.2)	23 (3.7)	36 (4.2)	27 (2.7)	6 (1.8)	299 (3.0)
Private school in Ohio	108	440	6	4 (2.4)	17 (5.0)	39 (7.3)	34 (5.4)	5 (4.1)	310 (3.6)
Private school outside Ohio	30	101	1	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)
Did not receive high school diploma	314	1,666	24	26 (3.7)	40 (6.0)	27 (3.7)	6 (2.0)	1 (0.6)	252 (3.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Participation in Adult Education and Training

The National and State Adult Literacy Surveys asked respondents to provide information on their enrollment in adult education and training programs. A primary goal was to investigate the relationship between program participation and literacy.

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Enrollment in a basic skills program

Survey respondents were asked whether they had ever enrolled in a program to improve their basic skills — that is, their basic reading, writing, and arithmetic skills. Approximately 7 percent of the adults in Ohio reported that they had participated in such a program (Table 2.14).

Individuals who said they had enrolled in a basic skills program demonstrated significantly lower document and quantitative proficiencies, on average, than those who had not. Though the prose proficiencies of basic skills program participants also appear to be lower, this difference is not statistically significant.

OHIO TABLE 2.14

Literacy Levels and Average Proficiencies, by Enrollment in a Basic Skills Program: Results for Ohio

EVER ENROLLED IN A BASIC SKILLS PROGRAM?				Percentage of adults in each literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Prose									
Yes	138	614	7	20 (4.7)	28 (6.7)	41 (5.5)	10 (3.9)	1 (0.7)	269 (5.8)
No	1,427	7,619	93	15 (1.5)	29 (1.6)	34 (2.0)	19 (1.5)	3 (0.5)	281 (2.4)
Document									
Yes	138	614	7	24 (6.1)	35 (6.2)	32 (5.3)	7 (3.7)	1 (1.2)	261 (5.9)
No	1,427	7,619	93	17 (1.7)	30 (2.0)	32 (1.7)	18 (1.8)	3 (0.6)	277 (2.4)
Quantitative									
Yes	138	614	7	24 (4.1)	32 (6.9)	33 (7.5)	10 (5.0)	1 (1.0)	262 (6.2)
No	1,427	7,619	93	17 (1.8)	27 (1.9)	33 (2.1)	20 (1.1)	4 (0.8)	281 (2.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
‡ Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

These data suggest that individuals who need help in improving their literacy skills are more likely than those with higher proficiencies to be involved in programs designed to provide such assistance. Yet, the average scores of individuals who had participated in a basic skills program (261 to 269 across the scales) are higher than might be expected. It may be that their proficiencies were lower before they participated in the program and improved as a result of their involvement. Alternatively, it may be the case that those who need the most help are not receiving it. Further analyses are needed to investigate the characteristics of basic skills program participants and of the target populations for these programs.

Summary

The educational attainments of adults in Ohio were similar to those of adults in the Midwest. As expected, adults who had completed higher levels of schooling outperformed those with more limited education. The average proficiencies of adults who had completed no more than eight years of schooling were roughly 135 points lower than the average scores of those who had finished at least some graduate work.

Some high school graduates in the state, region, and nation did poorly in the assessment. Across the literacy scales, 12 to 15 percent of Ohio residents whose highest level of education was a high school diploma performed in the Level 1 range, and another 31 to 38 percent performed in Level 2. Conversely, just 12 to 16 percent reached the two highest levels on each scale. Adults who had completed two-year or four-year college degrees outperformed those whose highest level of education was a high school diploma.

The performance differences among various subpopulations can be at least partly explained by differences in years of schooling. Older adults tended to have completed fewer years of schooling than younger adults, for example. Further, in the regional and national populations, White adults tended to have completed more years of schooling than African American or Latino adults. In addition, the more years of schooling respondents' parents had completed, the more education they themselves were likely to have had.

When school dropouts were asked to indicate the main reason why they stopped their schooling, the reasons cited varied widely. Adults who cited family or personal problems as their main reason for dropping out of school had higher average prose proficiency than those who cited work or military service.

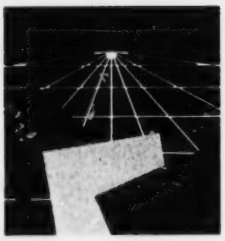
Thirty percent of the school dropouts in Ohio had studied for a GED or high school equivalency. Less than half, 41 percent, had earned a certificate, and their average scores were significantly higher than those of participants who did not earn one. The vast majority of GED program participants were age 25 or older.

Ten percent of the adults in Ohio and an equivalent percentage nationwide were currently enrolled in school or college, and their average prose, document, and quantitative scores were significantly higher than those of respondents who were not currently enrolled in an educational program. Nationwide, 10 percent of those enrolled said they expected to earn a high school diploma or equivalency, another 10 percent said they were working toward a vocational credential, 13 percent were pursuing an associate's degree, 38 percent were working on a four-year college degree, and 19 percent were working toward an advanced degree.

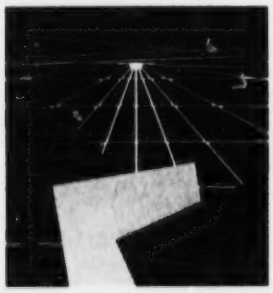
Eighty-nine percent of the adults in Ohio reported having completed at least some of their education in the state. Their average proficiencies were similar to those of adults who had attended school in Ohio.

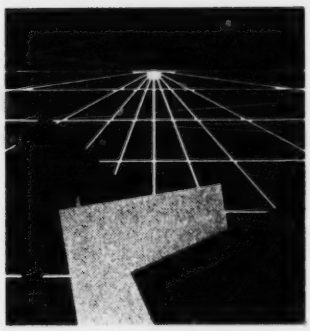
Almost two-thirds of the adults in Ohio had received a high school diploma in the state. There were no statistically significant differences among respondents according to the type of school from which they had received the diploma.

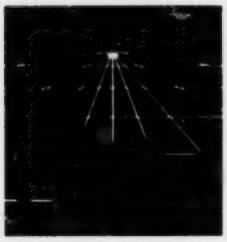
Seven percent of the Ohio residents were currently or previously enrolled in a program to improve their basic skills. Individuals who had participated in such a program demonstrated significantly lower document and quantitative proficiencies, on average, than those who had not.



SECTION III







SECTION III

Employment, Economic Status, and Civic Responsibility

The first two sections of this report offered a portrait of the literacy skills of adults in Ohio and illuminated some of the relationships that exist between education and literacy. In this section, the focus shifts to the connections between literacy and other aspects of adults' lives — including their employment, earnings, economic status, and civic participation. Because these areas are not relevant to the inmate population, these analyses focus only on survey participants living in households.

The State and National Adult Literacy Surveys gathered information from household survey participants on an array of social and economic variables, making it possible to examine the extent to which adults' literacy proficiencies vary according to their employment and economic characteristics. Do adults who are employed, who hold certain types of jobs, or who earn high wages tend to demonstrate advanced literacy skills? Are individuals who are poor or near poor, or who rely on public assistance or food stamps, more likely than their more affluent peers to perform in the lowest literacy levels? Do the literacy proficiencies of voters tend to differ from those of nonvoters? These types of questions are addressed in the pages that follow.

Employment

While our nation's concerns over adult literacy appropriately encompass all areas of life, in recent years much attention has been focused on the role that literacy plays in the workplace. Accordingly, one of the primary aims of this survey was to explore the connections between adults' work lives and their literacy skills. Respondents were asked a series of questions about their employment status and their current or most recent jobs. This section examines the relationships between adults' responses to these questions and their performance in the literacy assessment.

Labor force status

Survey participants were asked to indicate what their employment situation had been during the week before the survey. Nearly half (47 percent) of the adults in Ohio reported that they were employed full time, and another 12 percent said they were employed part time (Table 3.1P,D,Q). Approximately 7 percent of the state's residents were unemployed, laid off, or looking for work. One-third were out of the labor force — that is, not employed and not looking for work. These include adults who are in school, keeping house, retired, or doing volunteer work. The distribution of individuals across these labor force categories was almost identical for the Midwest region and the nation as a whole.

Ohio residents who were working full time and those working part time performed similarly in each of the three dimensions of literacy examined. On the prose scale, the percentages of full-time and part-time employees who performed in each literacy level were almost identical, and their average proficiencies were therefore essentially the same (299 and 295, respectively). These two groups also performed similarly on the document and quantitative scales.

The performance of employed adults differed sharply from that of adults who were either unemployed or out of the labor force. Across the scales, between 31 and 38 percent of the employed adults in Ohio performed in Levels 1 and 2, in contrast to approximately 60 percent of unemployed adults and roughly two-thirds of adults who were out of the labor force. Conversely, employed adults were much more likely to reach the highest literacy levels. On the document scale, for example, 24 percent of full-time employees attained Level 4, and 4 percent reached Level 5. The proportions of adults who were either unemployed or out of the labor force who reached these uppermost levels were far smaller — about 10 percent for each group.

The average proficiency results also reflect this strong association between literacy and labor force status. For example, while full-time employees in Ohio had an average quantitative score of 300 (within the Level 3 range), the average score of unemployed adults was 259, and of adults not in the labor force, it was 250 (both in the Level 2 range). Similar patterns are found in the regional and national results. The only notable variation is that in the regional and national results there are statistically significant differences between the average scores of unemployed adults and the average scores of those who were out of the labor force.

OHIO TABLE 3.1P

Prose Literacy Levels and Average Proficiencies, by Labor Force Status: Results for Ohio, the Midwest, and the Nation

LABOR FORCE STATUS				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Employed full-time	796	3,778	47	7 (1.6)	24 (2.5)	39 (2.8)	26 (2.6)	5 (1.3)	299 (3.9)
Employed part-time	185	967	12	7 (2.6)	27 (3.7)	41 (7.0)	21 (4.6)	4 (2.4)	295 (4.1)
Unemployed	134	598	7	21 (7.8)	38 (5.8)	32 (7.8)	9 (3.7)	1 (2.2)	265 (7.9)
Out of labor force	394	2,632	33	31 (3.0)	33 (4.1)	26 (3.4)	10 (3.2)	1 (0.6)	252 (4.9)
Midwest									
Employed full-time	3,714	20,595	47	8 (0.6)	24 (1.2)	40 (1.8)	24 (1.3)	4 (0.5)	296 (1.7)
Employed part-time	935	5,681	13	9 (1.6)	26 (3.5)	42 (4.6)	19 (2.5)	4 (1.1)	291 (2.8)
Unemployed	545	3,036	7	19 (2.5)	36 (3.4)	32 (3.2)	12 (3.1)	1 (0.6)	267 (3.5)
Out of labor force	1,782	14,188	33	32 (2.0)	32 (1.9)	25 (1.9)	10 (1.3)	1 (0.3)	252 (2.3)
Nation									
Employed full-time	12,466	89,723	48	13 (0.6)	24 (0.7)	36 (1.0)	23 (0.7)	5 (0.3)	288 (0.9)
Employed part-time	3,051	23,600	13	14 (0.8)	26 (1.5)	36 (1.8)	20 (1.3)	4 (0.5)	284 (1.4)
Unemployed	1,942	13,557	7	24 (1.3)	35 (1.7)	29 (2.7)	11 (1.8)	1 (0.4)	260 (2.1)
Out of labor force	6,721	58,202	31	35 (0.8)	30 (1.0)	25 (0.9)	9 (0.7)	1 (0.3)	246 (1.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

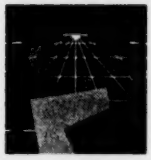
† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Occupation

While it might be useful to know the level of literacy skills required to find, hold, and succeed in various types of jobs, there has been limited research in this area. Such questions can be approached, however, by looking at the literacy skills of adults within certain types of occupations.

Accordingly, household survey participants were asked to describe the type of work they performed in their current or most recent jobs, and this information was sorted into occupational categories using the Census



OHIO TABLE 3.1D

Document Literacy Levels and Average Proficiencies, by Labor Force Status: Results for Ohio, the Midwest, and the Nation

LABOR FORCE STATUS				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Employed full-time	796	3,778	47	9 (1.6)	26 (2.7)	37 (2.2)	24 (2.7)	4 (1.0)	295 (3.8)
Employed part-time	185	967	12	9 (2.6)	28 (4.5)	43 (5.9)	17 (4.1)	3 (2.0)	289 (4.3)
Unemployed	134	598	7	25 (7.3)	39 (7.5)	26 (5.2)	8 (3.6)	2 (2.2)	260 (7.8)
Out of labor force	394	2,632	33	34 (3.7)	36 (3.9)	22 (2.3)	8 (2.0)	1 (0.8)	247 (4.2)
Midwest									
Employed full-time	3,714	20,595	47	9 (0.8)	27 (1.5)	39 (2.0)	22 (1.4)	3 (0.7)	292 (1.8)
Employed part-time	935	5,681	13	12 (1.8)	29 (2.2)	38 (3.7)	18 (2.2)	3 (1.0)	284 (2.7)
Unemployed	545	3,036	7	22 (2.6)	36 (3.8)	30 (4.1)	10 (2.2)	2 (0.9)	263 (3.9)
Out of labor force	1,782	14,188	33	36 (2.2)	33 (3.1)	22 (2.2)	8 (1.2)	1 (0.2)	245 (2.7)
Nation									
Employed full-time	12,466	89,723	48	14 (0.7)	26 (0.6)	35 (0.7)	21 (0.7)	4 (0.3)	284 (0.9)
Employed part-time	3,051	23,600	13	17 (0.9)	29 (1.3)	34 (1.7)	17 (1.0)	3 (0.4)	277 (1.3)
Unemployed	1,942	13,557	7	26 (1.2)	34 (1.7)	29 (1.8)	9 (1.1)	1 (0.4)	257 (1.7)
Out of labor force	6,721	58,202	31	39 (1.0)	31 (0.9)	22 (0.8)	7 (0.5)	1 (0.1)	237 (1.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Classification for Industries and Occupations. These categories were then recombined into four occupational groupings: professional, managerial, or technical; sales or clerical; craft or service; and labor, assembly, fishing, or farming.

Twenty-three percent of the adults in Ohio worked in managerial, professional, or technical jobs; 28 percent were in sales or clerical occupations; 30 percent worked in craft or service occupations; and 19 percent were in labor, assembly, fishing, or farming jobs (Table 3.2P,D,Q). Comparable percentages of adults nationwide reported working in each of these types of occupations.

OHIO TABLE 3.1Q

Quantitative Literacy Levels and Average Proficiencies, by Labor Force Status: Results for Ohio, the Midwest, and the Nation

LABOR FORCE STATUS				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Employed full-time	796	3,778	47	8 (1.9)	23 (3.7)	36 (4.0)	27 (1.8)	6 (1.1)	300 (4.0)
Employed part-time	185	967	12	7 (2.3)	31 (6.0)	42 (6.2)	16 (4.4)	4 (2.6)	290 (3.8)
Unemployed	134	598	7	27 (6.6)	35 (8.1)	25 (6.2)	11 (4.7)	1 (1.3)	259 (7.8)
Out of labor force	394	2,632	33	33 (2.8)	29 (4.0)	26 (3.2)	11 (3.1)	1 (0.5)	250 (4.7)
Midwest									
Employed full-time	3,714	20,595	47	8 (0.9)	22 (2.1)	38 (1.8)	26 (1.5)	6 (0.6)	299 (2.1)
Employed part-time	935	5,681	13	11 (1.9)	28 (2.8)	38 (3.7)	19 (2.5)	4 (1.3)	288 (2.8)
Unemployed	545	3,036	7	26 (2.7)	33 (3.7)	28 (3.3)	10 (2.1)	2 (1.1)	261 (4.2)
Out of labor force	1,782	14,188	33	31 (2.4)	29 (1.8)	27 (2.4)	11 (1.5)	1 (0.3)	252 (3.7)
Nation									
Employed full-time	12,466	89,723	48	13 (0.6)	23 (0.9)	35 (1.1)	23 (0.6)	6 (0.3)	290 (0.9)
Employed part-time	3,051	23,600	13	15 (1.1)	27 (1.3)	36 (1.6)	18 (1.3)	3 (0.5)	280 (1.5)
Unemployed	1,942	13,557	7	28 (1.5)	32 (1.8)	28 (2.0)	10 (1.3)	2 (0.4)	256 (1.9)
Out of labor force	6,721	58,202	31	37 (1.0)	27 (0.8)	24 (0.8)	10 (0.7)	2 (0.3)	241 (1.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Literacy proficiencies vary across the occupational groups. Although some individuals in managerial and professional jobs displayed limited literacy skills, they were less likely than respondents in other types of jobs to perform in the lowest literacy levels and more likely to attain the highest levels defined. On the quantitative scale, for example, 1 percent of Ohio adults in professional, managerial, or technical positions performed in Level 1, in contrast to 6 percent of sales or clerical workers, 15 percent of craft or service workers, and 20 percent of laborers. Thirteen percent of the adults in professional jobs performed in Level 2 on this scale, compared with one-quarter to one-third of the adults in each of the other occupational categories. In contrast, 53 percent of the adults

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OHIO TABLE 3.2P

Prose Literacy Levels and Average Proficiencies, by Occupational Category: Results for Ohio, the Midwest, and the Nation

OCCUPATIONAL CATEGORY				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Professional, Manager	316	1,439	23	1 (1.4)	9 (2.4)	34 (4.4)	45 (4.7)	11 (3.4)	329 (4.2)
Sales, Clerical	390	1,723	28	5 (1.6)	23 (2.9)	47 (3.8)	22 (3.4)	3 (1.3)	299 (2.6)
Craft, Service	349	1,859	30	12 (3.1)	34 (3.7)	38 (4.8)	14 (4.4)	2 (0.9)	279 (3.9)
Laborer, Assembler	207	1,153	19	16 (4.5)	39 (5.5)	34 (6.4)	10 (3.9)	1 (0.6)	265 (7.5)
Midwest									
Professional, Manager	1,560	7,724	22	2 (0.8)	11 (1.7)	35 (2.2)	42 (2.4)	11 (1.3)	325 (2.3)
Sales, Clerical	1,821	9,498	28	5 (0.8)	23 (1.9)	47 (2.6)	22 (2.0)	3 (0.7)	298 (1.7)
Craft, Service	1,632	9,887	29	14 (1.2)	33 (2.1)	38 (3.3)	13 (1.6)	1 (0.5)	276 (1.8)
Laborer, Assembler	1,148	7,286	21	19 (2.2)	36 (3.1)	34 (2.8)	10 (1.5)	1 (0.5)	266 (2.8)
Nation									
Professional, Manager	5,461	35,599	24	3 (0.4)	13 (1.0)	34 (1.2)	39 (1.1)	11 (0.7)	322 (1.0)
Sales, Clerical	6,544	41,713	28	8 (0.6)	25 (0.9)	43 (1.4)	21 (1.1)	3 (0.4)	293 (1.1)
Craft, Service	5,614	42,187	29	22 (0.8)	32 (1.1)	33 (1.1)	12 (0.8)	1 (0.2)	264 (1.1)
Laborer, Assembler	3,479	27,671	19	29 (1.3)	33 (1.4)	29 (1.3)	8 (0.7)	1 (0.2)	249 (1.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

in professional, managerial, or technical jobs performed in Levels 4 and 5, compared with 26 percent of sales or clerical employees, 18 percent of craft or service workers, and 15 percent of those in labor, assembly, fishing, or farming jobs.

In general, Ohio residents who were in professional, managerial, or technical positions demonstrated stronger literacy skills than those in other types of jobs. Their average score on the prose scale was 329, for example, while that of adults in labor, assembly, fishing, or farming positions was 265; that of adults in craft or service positions was 279; and that of adults in sales or clerical positions was 299.

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OHIO TABLE 3.2D

Document Literacy Levels and Average Proficiencies, by Occupational Category: Results for Ohio, the Midwest, and the Nation

OCCUPATIONAL CATEGORY	n	WGT N (/1000)	PCT	Percentage of adults in each document literacy level: Level 1 225 or lower RPCT (SE)	Level 2 226 to 275 RPCT (SE)	Level 3 276 to 325 RPCT (SE)	Level 4 326 to 375 RPCT (SE)	Level 5 376 or higher RPCT (SE)	Average Proficiency PROF (SE)
Ohio									
Professional, Manager	316	1,439	23	1 (1.2)	13 (4.5)	38 (4.1)	38 (5.4)	9 (2.5)	322 (5.0)
Sales, Clerical	390	1,723	28	5 (1.6)	27 (3.2)	45 (2.9)	22 (3.0)	2 (1.1)	296 (2.9)
Craft, Service	349	1,859	30	14 (3.6)	36 (4.4)	35 (4.8)	13 (3.4)	1 (0.7)	275 (4.0)
Laborer, Assembler	207	1,153	19	22 (5.7)	37 (4.9)	29 (3.8)	11 (4.0)	1 (0.6)	263 (7.5)
Midwest									
Professional, Manager	1,560	7,724	22	3 (1.0)	14 (1.8)	38 (2.4)	37 (2.8)	8 (1.7)	318 (2.2)
Sales, Clerical	1,821	9,496	28	6 (1.1)	27 (1.7)	44 (2.4)	20 (2.0)	2 (0.8)	293 (1.5)
Craft, Service	1,632	9,887	29	16 (1.7)	35 (2.1)	35 (3.1)	13 (1.8)	1 (0.6)	274 (1.9)
Laborer, Assembler	1,148	7,286	21	20 (2.2)	36 (3.1)	33 (2.2)	10 (1.7)	1 (0.4)	264 (3.1)
Nation									
Professional, Manager	5,461	35,599	24	4 (0.6)	15 (0.8)	37 (1.1)	35 (1.3)	9 (0.7)	315 (1.0)
Sales, Clerical	6,544	41,713	28	9 (0.7)	29 (1.0)	40 (1.4)	19 (1.0)	2 (0.3)	287 (1.0)
Craft, Service	5,614	42,187	29	23 (0.8)	33 (1.1)	31 (1.4)	11 (0.9)	1 (0.2)	262 (1.2)
Laborer, Assembler	3,479	27,671	19	30 (1.3)	33 (1.4)	28 (1.4)	8 (0.6)	1 (0.2)	247 (1.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

In viewing these results, it is important to remember that education is strongly associated with literacy skills and that adults in professional, managerial, or technical positions are likely to have higher levels of education than adults in other types of positions. It is also true that many of these positions offer or require continuing education and training opportunities that enable individuals to further enhance their proficiencies.[1]

[1] N.P. Eurich. (1990). *The Learning Industry: Education for Adult Workers*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

OHIO TABLE 3.2Q

Quantitative Literacy Levels and Average Proficiencies, by Occupational Category: Results for Ohio, the Midwest, and the Nation

OCCUPATIONAL CATEGORY	n	WGT N (/1000)	PCT	Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
				RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Professional, Manager	316	1,439	23	1 (1.1)	13 (2.2)	33 (4.8)	41 (3.2)	12 (2.9)	326 (2.9)
Sales, Clerical	390	1,723	28	6 (1.8)	25 (2.6)	43 (4.9)	23 (3.1)	3 (1.5)	298 (2.3)
Craft, Service	349	1,859	30	15 (5.3)	31 (4.0)	35 (3.2)	15 (2.7)	3 (1.4)	279 (5.5)
Laborer, Assembler	207	1,153	19	20 (5.7)	33 (7.6)	33 (8.4)	13 (3.4)	2 (1.3)	268 (8.0)
Midwest									
Professional, Manager	1,560	7,724	22	3 (0.7)	13 (2.0)	33 (2.1)	40 (2.7)	12 (1.5)	324 (2.2)
Sales, Clerical	1,821	9,498	28	6 (1.1)	25 (1.7)	43 (2.3)	23 (1.7)	4 (0.8)	297 (1.9)
Craft, Service	1,632	9,887	29	16 (1.5)	31 (2.5)	35 (2.2)	15 (1.0)	2 (0.8)	277 (2.2)
Laborer, Assembler	1,148	7,286	21	18 (2.6)	30 (4.8)	36 (3.5)	14 (2.0)	2 (0.5)	272 (2.9)
Nation									
Professional, Manager	5,461	35,599	24	4 (0.5)	14 (0.9)	34 (1.2)	36 (0.8)	13 (0.7)	322 (1.0)
Sales, Clerical	6,544	41,713	28	9 (0.5)	25 (0.8)	41 (1.4)	21 (1.1)	3 (0.3)	292 (1.1)
Craft, Service	5,614	42,187	29	24 (0.8)	30 (1.2)	32 (1.2)	13 (0.7)	2 (0.4)	264 (1.3)
Laborer, Assembler	3,479	27,671	19	29 (1.6)	30 (1.6)	30 (1.8)	10 (1.4)	1 (0.3)	253 (2.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Weeks worked

Household survey participants, regardless of their current or recent employment status, were asked how many weeks they had worked in the past 12 months. On each scale, and in each population — state, region, and nation — adults who performed in Levels 3, 4, and 5 tended to work more weeks in the past year than those in Level 2, who, in turn, tended to work more weeks than those in Level 1 (Table 3.3). The only exception to this pattern is found on the quantitative scale, where the average numbers of weeks worked by those in Levels 2 and 3 are not significantly different.

OHIO TABLE 3.3
Average Number of Weeks Worked in the Past 12 Months, by Literacy Level: Results for Ohio, the Midwest, and the Nation

	LITERACY LEVEL	Level 1 225 or lower		Level 2 226 to 275		Level 3 276 to 325		Level 4 326 to 375		Level 5 376 or higher	
		WKS	(SE)	WKS	(SE)	WKS	(SE)	WKS	(SE)	WKS	(SE)
Prose											
Ohio		14	(2.3)	24	(1.4)	35	(1.1)	38	(2.1)	46	(2.8)
Midwest		16	(0.7)	26	(0.7)	35	(0.8)	37	(1.0)	44	(1.8)
Nation		19	(0.5)	27	(0.4)	35	(0.4)	38	(0.4)	44	(0.7)
Document											
Ohio		15	(1.8)	24	(1.7)	35	(1.1)	40	(1.6)	46	(2.6)
Midwest		16	(1.1)	27	(0.6)	35	(0.9)	40	(0.8)	42	(2.1)
Nation		19	(0.5)	29	(0.3)	35	(0.4)	40	(0.4)	43	(0.8)
Quantitative											
Ohio		13	(2.1)	28	(1.5)	32	(1.4)	40	(1.9)	45	(1.7)
Midwest		15	(1.5)	28	(0.7)	34	(1.0)	39	(0.8)	42	(2.5)
Nation		18	(0.5)	29	(0.4)	34	(0.4)	39	(0.4)	40	(0.8)

WKS = average number of weeks worked in the past 12 months; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

In fact, the number of weeks worked increases dramatically across the literacy levels. On each scale, Ohio respondents who performed in the lowest level worked, on average, only about 13 to 15 weeks a year. In contrast, individuals in Level 2 worked an average of 24 to 28 weeks, those in Level 3 worked 32 to 35 weeks, adults in Level 4 worked 38 to 40 weeks, and individuals in Level 5 worked an average of 45 to 46 weeks. Thus, respondents performing in the highest literacy level worked, on average, about three times as many weeks as those in the lowest level.

Economic Status

To explore the relationships between literacy and economic status, the State and National Adult Literacy Surveys included a series of questions requesting detailed information about respondents' incomes. One of the questions asked for information on weekly wages, another asked about annual household income, and another asked about sources of nonwage income.

When adults' literacy proficiencies are compared according to their responses to these questions, strong relationships between literacy and economic status are evident. Individuals who performed in the lowest literacy levels were far more likely than those in the higher levels to earn low wages, to have low annual household incomes, and to be poor or near poor.

Weekly wages

Individuals who were working full time or part time or were on leave from their jobs the week before the survey were asked to report their weekly wage or salary before deductions. Given that individuals in professional, managerial, or technical positions were more likely to perform in the higher literacy levels, and that those in the higher literacy levels were likely to have worked more weeks in the past year than individuals in the lower levels, it is not surprising that median weekly wages are also higher for adults with greater literacy proficiencies (Table 3.4).

OHIO TABLE 3.4
Median Weekly Wages, by Literacy Level: Results for Ohio, the Midwest, and the Nation

	LITERACY LEVEL	Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher
		WW (SE)	WW (SE)	WW (SE)	WW (SE)	WW (SE)
Prose						
Ohio		205 (39.1)	286 (53.0)	320 (7.3)	414 (39.9)	594 (62.7)
Midwest		228 (11.7)	262 (26.2)	309 (12.5)	424 (27.4)	607 (116.1)
Nation		240 (2.2)	281 (4.8)	339 (16.9)	465 (19.0)	650 (61.5)
Document						
Ohio		197 (51.6)	298 (46.3)	332 (45.0)	418 (43.2)	560 (116.0)
Midwest		230 (10.4)	276 (10.5)	319 (14.3)	411 (19.8)	567 (112.7)
Nation		244 (5.2)	288 (8.9)	350 (0.6)	462 (28.7)	618 (34.6)
Quantitative						
Ohio		199 (24.3)	281 (33.1)	314 (13.9)	422 (22.3)	573 (190.0)
Midwest		220 (19.2)	251 (2.2)	306 (14.6)	427 (49.6)	621 (69.6)
Nation		230 (10.5)	274 (11.4)	345 (3.8)	472 (14.9)	681 (49.5)

WW = median weekly wages; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Across the literacy scales, the median weekly earnings of Ohio residents who performed in Level 1 were between $197 and $205. In comparison, those in Level 2 earned $281 to $298 each week, and individuals in Level 3 earned $314 to $332. Adults in Level 4 reported earning $414 to $422, or approximately $209 to $223 more than those in Level 1. For Ohio residents who attained Level 5, the financial rewards were substantially greater. Individuals performing in this level had median earnings of $560 to $594 each week — nearly $400 more than individuals who demonstrated skills in the Level 1 range on that scale.

The weekly wages earned by adults in Ohio were comparable to the wages earned by adults in the region and the nation as a whole.

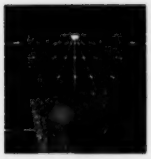
Annual household income

Household survey respondents were asked to indicate their total family incomes from all sources in the year preceding the survey. They were instructed to consider as family anyone who lives with them and is related by blood, marriage, or adoption.

The pattern observed in the weekly wages data is repeated in the median annual household income data: Adults who performed in the highest literacy levels tended to report much larger annual household incomes than adults in the lowest levels. On the document scale, for example, the median annual household income of Ohio residents who performed in the two highest proficiency levels was greater than $41,000, compared with $24,000 for respondents who performed in Level 2 and $15,000 for respondents in the lowest level (Table 3.5). These strong relationships between literacy and family income are also evident in the regional and national data, where the gap in median annual earnings between the highest and lowest proficiency level was between $33,000 and $40,000.

Sources of nonwage income

Household survey participants were given a list of various types of nonwage income and support and asked to identify each type that they or anyone in their families had received in the year preceding the survey. The skills of individuals who reported receiving three types of nonwage income and support that reflect socioeconomic status are examined here: Aid to Families with Dependent Children (AFDC), food stamps, and interest from savings or other bank accounts.



OHIO TABLE 3.5
Median Annual Household Income, by Literacy Level: Results for Ohio, the Midwest, and the Nation

	LITERACY LEVEL	Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher
		HI (SE)	HI (SE)	HI (SE)	HI (SE)	HI (SE)
Prose						
Ohio		15,870 (5,980)	21,400 (60)	31,220 (1,770)	42,090 (3,880)	49,940 (5,660)
Midwest		16,630 (1,210)	24,710 (720)	34,190 (1,320)	44,590 (610)	52,400 (2,740)
Nation		15,550 (1,650)	25,010 (300)	35,020 (300)	45,610 (1,330)	55,400 (7,120)
Document						
Ohio		15,450 (3,970)	24,000 (2,550)	33,990 (2,170)	41,390 (4,670)	46,360 (7,930)
Midwest		17,280 (1,340)	27,020 (1,320)	35,210 (460)	44,000 (1,310)	50,410 (6,700)
Nation		16,300 (1,850)	27,580 (610)	36,700 (1,560)	46,180 (3,020)	51,100 (1,250)
Quantitative						
Ohio		14,780 (5,090)	23,320 (2,770)	31,210 (1,420)	41,780 (5,890)	48,290(11,830)
Midwest		15,630 (1,670)	26,090 (2,630)	33,030 (4,170)	43,490 (3,510)	50,410 (970)
Nation		15,180 (280)	25,820 (2,550)	35,010 (300)	44,980 (400)	53,910 (2,940)

HI = median annual household income; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Eight percent of the adults in Ohio reported having received AFDC or public assistance in the year before the survey. Across the literacy scales, about two-thirds of these adults demonstrated skills in the two lowest literacy levels; 23 to 30 percent performed in Level 1, and another 36 to 37 percent performed in Level 2 (Table 3.6P,D,Q). At the other end of the scale, just 7 to 9 percent of the adults who received AFDC or public assistance performed in Level 4, and up to 1 percent were in Level 5.

The results for food stamp recipients are very similar. Eleven percent of Ohio residents said they or someone in their families had received food stamps in the past year. Across the scales, 28 to 36 percent of these individuals performed in Level 1, and 35 to 39 percent performed in Level 2, while just 6 to 7 percent reached Level 4, and less than 1 percent performed in Level 5.

OHIO TABLE 3.6P

Prose Literacy Levels and Average Proficiencies, by Sources of Nonwage Income and Support: Results for Ohio, the Midwest, and the Nation

SOURCES OF NONWAGE INCOME AND SUPPORT	n	WGT N (/1000)	Percentage of adults in each prose literacy level: Level 1 225 or lower RPCT (SE)	Level 2 226 to 275 RPCT (SE)	Level 3 276 to 325 RPCT (SE)	Level 4 326 to 375 RPCT (SE)	Level 5 376 or higher RPCT (SE)	Average Proficiency PROF (SE)
Ohio								
AFDC, public assistance	168	678	23 (8.9)	37 (6.5)	31 (7.6)	9 (2.5)	0† (0.4)	261 (6.7)
Food stamps	222	923	28 (6.7)	39 (4.8)	26 (4.8)	7 (2.2)	0† (0.3)	252 (5.3)
Interest from savings	684	3,729	9 (1.3)	20 (2.2)	37 (2.9)	28 (2.4)	6 (1.0)	300 (2.1)
Midwest								
AFDC, public assistance	621	3,150	24 (3.7)	40 (3.2)	28 (2.6)	8 (1.8)	1 (1.1)	259 (3.0)
Food stamps	837	4,283	29 (3.7)	38 (3.7)	25 (2.4)	7 (1.9)	0† (0.8)	250 (2.5)
Interest from savings	3,578	23,329	12 (1.1)	21 (1.6)	37 (1.8)	25 (1.1)	5 (0.5)	294 (1.2)
Nation								
AFDC, public assistance	2,070	11,995	34 (1.7)	36 (1.6)	24 (1.7)	6 (1.1)	0† (0.3)	243 (2.2)
Food stamps	3,001	17,953	38 (1.6)	36 (1.4)	21 (1.4)	5 (0.9)	0† (0.4)	236 (1.8)
Interest from savings	10,884	88,365	11 (0.4)	21 (0.9)	36 (1.0)	26 (0.7)	6 (0.5)	297 (0.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Forty-five percent of the adults in Ohio reported having received interest from savings in the past year. These individuals were much less likely than AFDC or food stamp recipients to perform in the lowest levels on each scale and much more likely to attain the highest levels. On the document scale, for example, 10 percent of adults who earned interest from savings performed in the Level 1 range, and another 24 percent performed in Level 2, while 25 percent were in the fourth level, and another 5 percent attained the highest level.

These differences in the distributions of performance are echoed in the average proficiency results, where Ohio residents who received interest from savings or another type of bank account in the past year had average scores that

OHIO TABLE 3.6D

Document Literacy Levels and Average Proficiencies, by Sources of Nonwage Income and Support: Results for Ohio, the Midwest, and the Nation

SOURCES OF NONWAGE INCOME AND SUPPORT			Percentage of adults in each document literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio								
AFDC, public assistance	168	678	30 (10.4)	37 (7.3)	26 (4.9)	7 (2.7)	0† (0.5)	254 (7.5)
Food stamps	222	923	36 (7.5)	36 (5.4)	21 (4.4)	6 (2.3)	0† (0.2)	245 (5.7)
Interest from savings	884	3,729	10 (1.4)	24 (2.4)	37 (2.7)	25 (2.6)	5 (1.0)	294 (2.6)
Midwest								
AFDC, public assistance	621	3,150	30 (3.2)	39 (2.8)	24 (2.7)	7 (2.3)	1 (1.2)	253 (3.5)
Food stamps	837	4,283	35 (2.4)	35 (2.5)	23 (1.9)	7 (1.7)	0† (0.8)	245 (3.2)
Interest from savings	3,576	23,329	13 (1.0)	25 (1.5)	36 (1.9)	22 (1.4)	4 (0.5)	287 (1.5)
Nation								
AFDC, public assistance	2,070	11,995	37 (1.5)	35 (1.2)	23 (1.5)	5 (0.9)	0† (0.3)	239 (2.0)
Food stamps	3,001	17,953	41 (1.4)	33 (1.4)	20 (1.1)	5 (0.6)	0† (0.3)	232 (1.9)
Interest from savings	10,884	88,365	13 (0.5)	24 (0.7)	35 (0.6)	23 (0.6)	5 (0.3)	289 (0.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

were 39 to 58 points higher than those of residents who said they or someone in their families had received public assistance or food stamps. For instance, the average prose score of those who had received AFDC or public assistance was 261, and the average score of food stamp recipients was 252, while for adults who had income from savings, it was 300.

OHIO TABLE 3.6Q

Quantitative Literacy Levels and Average Proficiencies, by Sources of Nonwage Income and Support: Results for Ohio, the Midwest, and the Nation

SOURCES OF NONWAGE INCOME AND SUPPORT			Percentage of adults in each quantitative literacy level					
			Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio								
AFDC, public assistance	168	678	30 (6.4)	36 (7.7)	23 (3.0)	9 (4.1)	1 (1.4)	253 (6.2)
Food stamps	222	923	36 (4.5)	35 (5.2)	22 (3.0)	7 (2.4)	0† (0.7)	245 (5.6)
Interest from savings	684	3,729	9 (1.3)	18 (2.6)	37 (2.9)	28 (1.4)	7 (1.4)	303 (2.4)
Midwest								
AFDC, public assistance	621	3,150	32 (3.5)	36 (4.5)	23 (3.9)	8 (1.5)	1 (1.0)	251 (3.3)
Food stamps	837	4,283	36 (3.3)	36 (3.3)	21 (3.2)	7 (1.7)	1 (0.7)	242 (3.3)
Interest from savings	3,578	23,329	10 (1.0)	21 (1.3)	36 (1.5)	26 (1.4)	6 (0.5)	298 (1.8)
Nation								
AFDC, public assistance	2,070	11,995	40 (1.7)	32 (1.4)	21 (2.0)	6 (1.0)	1 (0.4)	235 (2.3)
Food stamps	3,001	17,953	44 (1.5)	32 (1.4)	20 (1.4)	5 (0.7)	1 (0.4)	228 (1.9)
Interest from savings	10,884	88,365	11 (0.5)	20 (0.7)	36 (0.7)	27 (0.6)	7 (0.4)	298 (0.9)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Poverty status

Adults who participated in the household component of the National and State Adult Literacy Surveys were divided into two categories — poor or near poor, and not poor — based on annual household income and family size. (The criteria are provided in the appendices.) For example, adults whose household size is one and whose annual household income is at or below $8,665 are classified as poor or near poor. For adults in a four-person family, those whose annual household income is $17,405 or less are assigned to that category.

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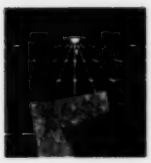
Eighteen percent of the adults in Ohio were designated as poor or near poor, compared with 17 percent of the adults in the Midwest and 19 percent nationwide (Table 3.7P,D,Q). Across the three literacy scales, approximately two-thirds of the Ohio residents who were classified as poor or near poor performed in the two lowest levels; 27 to 33 percent performed in Level 1, and another 35 to 37 percent performed in Level 2. In comparison, 34 to 41 percent of the adults classified as not poor were in the two lowest levels.



OHIO TABLE 3.7P

Prose Literacy Levels and Average Proficiencies, by Poverty Status: Results for Ohio, the Midwest, and the Nation

POVERTY STATUS				Percentage of adults in each prose literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Not poor	959	5,089	82	10 (1.7)	27 (1.7)	37 (2.2)	22 (2.2)	4 (0.8)	290 (3.5)
Poor or near poor	240	1,125	18	27 (5.6)	37 (4.2)	29 (4.6)	7 (1.8)	1 (0.5)	256 (4.9)
Midwest									
Not poor	4,516	28,196	83	10 (0.8)	25 (1.3)	38 (1.3)	22 (1.1)	4 (0.5)	292 (1.6)
Poor or near poor	1,040	5,814	17	30 (2.7)	34 (3.5)	27 (2.0)	9 (1.4)	1 (0.6)	252 (3.3)
Nation									
Not poor	14,868	113,929	81	12 (0.4)	24 (0.7)	37 (1.0)	23 (0.5)	5 (0.3)	290 (0.7)
Poor or near poor	3,968	26,353	19	38 (1.3)	31 (1.3)	22 (0.8)	8 (0.9)	1 (0.3)	239 (2.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 3.7D

Document Literacy Levels and Average Proficiencies, by Poverty Status: Results for Ohio, the Midwest, and the Nation

POVERTY STATUS				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Not poor	959	5,089	82	12 (2.1)	29 (1.9)	36 (1.9)	20 (2.4)	3 (0.9)	287 (3.7)
Poor or near poor	240	1,125	18	33 (5.9)	35 (6.4)	23 (4.3)	9 (3.1)	1 (0.5)	249 (6.6)
Midwest									
Not poor	4,516	28,196	83	13 (1.0)	29 (1.2)	36 (1.5)	20 (1.2)	3 (0.5)	285 (1.6)
Poor or near poor	1,040	5,814	17	35 (3.3)	32 (3.7)	24 (2.6)	9 (2.1)	1 (0.8)	246 (4.4)
Nation									
Not poor	14,868	113,929	81	14 (0.5)	27 (0.6)	35 (0.6)	20 (0.5)	4 (0.3)	284 (0.8)
Poor or near poor	3,968	26,353	19	42 (1.5)	29 (1.4)	21 (1.2)	8 (0.9)	1 (0.3)	234 (2.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

As a result of these differences in the distribution of performance, the average prose, document, and quantitative proficiency scores of Ohio adults who were poor or near poor are 34 to 44 points lower than the scores of adults who were not poor. On the quantitative scale, for example, the average proficiency among those who were not poor was 293, compared with an average score of 249 among those were poor or near poor. These results underscore literacy's strong connection to economic status.

OHIO TABLE 3.7Q

Quantitative Literacy Levels and Average Proficiencies, by Poverty Status: Results for Ohio, the Midwest, and the Nation

POVERTY STATUS				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Not poor	959	5,089	82	10 (1.4)	24 (2.8)	37 (3.0)	23 (1.3)	5 (1.0)	293 (3.2)
Poor or near poor	240	1,125	18	33 (4.1)	35 (5.3)	22 (3.2)	9 (3.7)	1 (0.6)	249 (5.8)
Midwest									
Not poor	4,516	28,196	83	10 (0.9)	24 (1.9)	37 (1.5)	23 (1.5)	5 (0.5)	294 (1.9)
Poor or near poor	1,040	5,814	17	34 (3.0)	31 (3.1)	25 (2.9)	9 (2.0)	1 (0.7)	246 (4.6)
Nation									
Not poor	14,868	113,929	81	12 (0.4)	23 (0.8)	36 (0.8)	23 (0.5)	6 (0.3)	291 (0.7)
Poor or near poor	3,968	26,353	19	42 (1.5)	28 (1.5)	21 (1.2)	8 (1.0)	1 (0.4)	233 (2.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Civic Responsibility

Another area of interest in the survey was that of civic responsibility. Accordingly, one of the background questions asked household survey participants whether or not they had voted in a state or national election in the past five years. Their answers make it possible to investigate the connection between civic responsibilities and demonstrated literacy proficiencies. Are voters more likely than nonvoters to display advanced literacy skills? The answer to this question is discussed below.

Voting

Ninety-five percent of the adults residing in Ohio at the time of the survey reported being eligible to vote. About two-thirds of these eligible voters in Ohio (68 percent) said they had voted in a state or national election in the past five years, compared with 72 percent of the eligible voters in the Midwest and 67 percent of those nationwide (Table 3.8P,D,Q).

OHIO TABLE 3.8P

Prose Literacy Levels and Average Proficiencies, by Voting in Recent Elections: Results for Ohio, the Midwest, and the Nation

VOTED IN THE PAST FIVE YEARS				*Percentage of adults in each prose literacy level*					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Yes	1,035	5,351	68	14 (1.4)	25 (2.0)	34 (2.0)	22 (2.0)	4 (0.8)	288 (2.6)
No	454	2,482	32	20 (3.2)	35 (3.5)	33 (4.0)	11 (1.5)	1 (0.6)	265 (3.7)
Midwest									
Yes	4,847	30,461	72	15 (1.0)	25 (1.4)	35 (1.3)	21 (1.0)	4 (0.4)	286 (1.5)
No	1,962	11,854	28	20 (1.5)	35 (1.8)	34 (2.0)	11 (1.2)	1 (0.4)	267 (1.4)
Nation									
Yes	15,484	117,379	67	16 (0.4)	24 (0.7)	34 (0.8)	22 (0.6)	5 (0.3)	285 (0.7)
No	7,616	58,510	33	26 (0.6)	32 (1.0)	30 (1.0)	11 (0.6)	1 (0.2)	257 (1.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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OHIO TABLE 3.8D

Document Literacy Levels and Average Proficiencies, by Voting in Recent Elections: Results for Ohio, the Midwest, and the Nation

VOTED IN THE PAST FIVE YEARS				Percentage of adults in each document literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Yes	1,035	5,351	68	16 (2.2)	29 (3.0)	33 (2.4)	19 (2.5)	3 (0.8)	282 (3.0)
No	454	2,482	32	23 (3.0)	34 (2.9)	31 (3.6)	12 (3.1)	1 (0.7)	264 (3.9)
Midwest									
Yes	4,847	30,461	72	18 (1.1)	28 (1.5)	33 (1.7)	18 (1.2)	3 (0.4)	278 (1.7)
No	1,962	11,854	28	22 (1.3)	34 (2.0)	32 (1.7)	12 (0.9)	1 (0.4)	265 (1.5)
Nation									
Yes	15,484	117,379	67	19 (0.5)	27 (0.6)	32 (0.7)	19 (0.5)	4 (0.2)	277 (0.8)
No	7,616	58,510	33	27 (0.6)	31 (0.7)	30 (0.7)	10 (0.5)	1 (0.2)	255 (1.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

The relationship between literacy skills and voting is similar in Ohio, the Midwest, and the nation. In all three populations, the average prose, document, and quantitative proficiencies of voters were significantly higher than those of nonvoters.

OHIO TABLE 3.8Q

Quantitative Literacy Levels and Average Proficiencies, by Voting in Recent Elections: Results for Ohio, the Midwest, and the Nation

VOTED IN THE PAST FIVE YEARS				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Ohio									
Yes	1,035	5,351	68	15 (1.2)	24 (2.2)	33 (2.8)	23 (1.1)	5 (0.9)	288 (2.4)
No	454	2,482	32	24 (3.5)	31 (3.2)	32 (2.8)	12 (2.9)	1 (0.8)	263 (5.1)
Midwest									
Yes	4,847	30,461	72	16 (1.0)	23 (1.5)	34 (1.2)	22 (1.3)	5 (0.5)	286 (1.9)
No	1,962	11,854	28	21 (1.9)	33 (3.2)	32 (2.6)	12 (1.2)	1 (0.5)	266 (2.1)
Nation									
Yes	15,484	117,379	67	17 (0.5)	23 (0.6)	33 (0.7)	22 (0.5)	6 (0.3)	284 (1.0)
No	7,616	58,510	33	28 (0.8)	30 (0.9)	29 (0.8)	11 (0.4)	1 (0.3)	255 (1.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Summary

Nearly half of the adults in Ohio reported that they were employed full time, and another 12 percent said they were employed part time. Approximately 7 percent were unemployed, laid off, or looking for work, and one-third were out of the labor force. In each of the three dimensions of literacy, full-time and part-time employees performed similarly. Employed adults were much more likely than adults who were unemployed or out of the labor force to reach the highest literacy levels and much less likely to perform in the lowest levels.

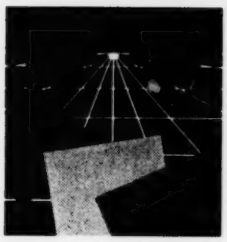
Almost one-quarter of the adults in Ohio said they worked in managerial, professional, or technical jobs; 28 percent were in sales or clerical occupations; 30 percent worked in craft or service occupations; and 19 percent were in labor, assembly, fishing, or farming jobs. Although some individuals in managerial and professional jobs displayed limited literacy skills, they were less likely than respondents in other types of jobs to perform in the lowest literacy levels and more likely to attain the highest levels.

On each literacy scale, the average number of weeks worked climbs steadily across the literacy levels. Adults with higher literacy proficiencies were also likely to earn greater weekly wages than adults with more limited skills. Similarly, individuals who performed in the highest literacy levels reported much higher annual household incomes, on average, than adults in the lowest levels.

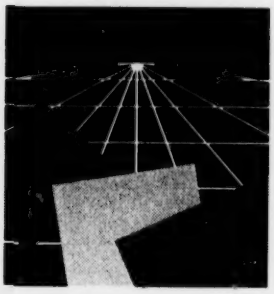
About two-thirds of the adults in Ohio whose families had received AFDC or public assistance in the past year performed in Levels 1 and 2 on each scale, while just 7 to 9 percent performed in Level 4, and less than 1 percent reached Level 5. The results for food stamp recipients are highly similar. In contrast, adults whose families had received interest from savings in the past year were less likely than those whose families had received food stamps or AFDC to perform in the lowest levels on each literacy scale and more likely to attain the highest levels.

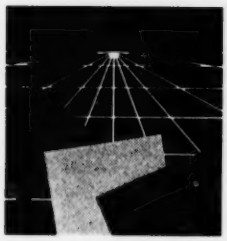
Adults who were poor or near poor were much more likely than those who were not poor to demonstrate limited literacy skills. Across the three literacy scales, approximately two-thirds of the Ohio residents classified as poor or near poor had proficiencies in the two lowest levels, compared with 34 to 41 percent of the adults classified as not poor.

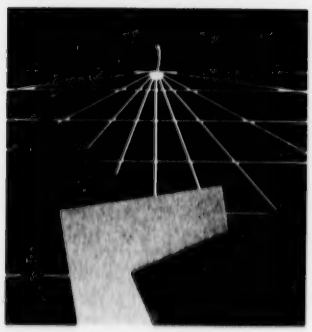
Sixty-eight percent of Ohio's eligible voters reported voting in a recent election, compared with 67 percent of those in the nation and 72 percent in the Midwest. In Ohio, as in the Midwest and nation, voters tended to perform better than nonvoters in the assessment.



SECTION IV







SECTION IV

Language Use and Literacy Practices

Previous studies have identified certain practices and conditions that are related to literacy. Accordingly, the State and National Adult Literacy Surveys included an extensive set of questions that asked respondents about their early language experiences, their perceptions of their literacy skills, and the frequency with which they engage in various reading and writing practices. This section of the report examines responses to these questions and their relationship to demonstrated literacy proficiencies.

Language Use

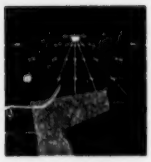
One area of primary interest in the survey was that of language use. What proportions of the adults in Ohio and nationwide were bilingual or spoke a language other than English as children? What languages do respondents speak now, in various contexts? Do adults who demonstrate limited skills in the English language perceive themselves as having limited proficiency? These and other questions are explored in the beginning of this section.

Language learned before starting school

Survey participants were asked what language or languages they learned to speak before they started school, and their responses were analyzed to determine the percentages of adults who spoke English only, who spoke another language only, and who spoke English and another language.

Almost all (95 percent) of the respondents in Ohio said they spoke only English before beginning their schooling, and 2 percent said they spoke another language only. Three percent were bilingual in English and another language as children (Table 4.1).

Nationwide, 85 percent of the respondents reported speaking English only, 10 percent said they spoke another language only, and 5 percent spoke both English and another language before they began their schooling. In contrast, 91 percent of the respondents from the Midwest reported speaking



OHIO TABLE 4.1

Average Literacy Proficiencies, by Languages Learned Before Starting School: Results for Ohio, the Midwest, and the Nation

LANGUAGES LEARNED BEFORE STARTING SCHOOL				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Ohio						
English only	1,506	7,833	95	282 (2.7)	278 (2.8)	281 (3.1)
Spanish/Other only	29	198	2	*** (****)	*** (****)	*** (****)
English and Spanish/Other	31	223	3	*** (****)	*** (****)	*** (****)
Midwest						
English only	6,917	41,386	91	283 (1.0)	277 (1.2)	283 (1.4)
Spanish/Other only	331	2,034	4	215 (7.0)	218 (7.0)	222 (7.4)
English and Spanish/Other	234	1,839	4	264 (11.9)	254 (11.1)	260 (14.2)
Nation						
English only	21,980	162,016	85	282 (0.7)	275 (0.8)	280 (0.8)
Spanish/Other only	2,794	19,569	10	200 (2.1)	200 (2.3)	204 (2.4)
English and Spanish/Other	1,271	9,408	5	264 (3.5)	257 (3.4)	260 (4.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

English only, 4 percent said they spoke another language only, and 4 percent were bilingual before they began their schooling. Thus, the percentages of adults in Ohio and the Midwest who reported speaking only English as children were larger than the percentage in the United States population as a whole.

In Ohio, the number of adults who learned only a language other than English or were bilingual before starting school is too small to support analyses of performance. In the region and nation, however, adults who reported speaking only English as children tended to display better English literacy skills

than adults who were bilingual. Nationwide, the gap in average scores between English-only and bilingual individuals was roughly 20 points on each literacy scale. Individuals who spoke only English as children performed, on average, toward the low end of the Level 3 range, while those who spoke English and another language tended to perform in the Level 2 range.

Adults who were bilingual as children, in turn, performed far better than adults who spoke only another language before starting school. Here, the gap was larger than between English-only and bilingual respondents. In the national population, adults who spoke both English and another language as children had an average prose score of 264, while those who spoke only another language had an average score of 200 — within the range for Level 1. Similarly, on the document and quantitative scales, the average proficiencies of individuals who were bilingual as children and those who spoke only a language other than English differed by approximately 60 points.

Language usually spoken now

Respondents who said they learned a language other than English before starting school were asked what language they usually speak now. Nationwide, 65 percent of the respondents who learned another language before starting school reported that they usually speak English now, while 27 percent said they usually speak Spanish, and 8 percent said they usually speak some other language (Table 4.2).

These national results contrast with the pattern for adults in the state and region. Ninety-seven percent of the adults in Ohio and 83 percent of those in the Midwest who learned another language before starting school said they usually speak English now.

The numbers of Ohio residents who learned Spanish or another language as children and usually speak that language now were too small to make reliable proficiency comparisons.

In the national and regional populations, though, adults who learned another language as children but now usually speak English performed far better in the assessment than those who usually speak another language. Among adults in the Midwest, for example, the average proficiency scores of those who usually speak English and those who usually speak Spanish differ by 80 points on the prose scale, 66 points on the document scale, and 71 points on the quantitative scale. Stated differently, adults who usually speak Spanish had average scores in the Level 1 range on each scale, while those who usually speak English tended to score in the Level 2 range.

OHIO TABLE 4.2

Average Literacy Proficiencies of Adults Who Learned a Non-English Language, By Language Spoken Now: Results for Ohio, the Midwest, and the Nation

LANGUAGE USUALLY SPOKEN NOW				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Ohio						
English	54	379	97	247 (12.3)	245 (13.4)	251 (10.4)
Spanish	1	3	1	*** (****)	*** (****)	*** (****)
Other	2	9	2	*** (****)	*** (****)	*** (****)
Midwest						
English	394	3,120	83	251 (7.5)	245 (7.6)	250 (9.4)
Spanish	133	522	14	171 (12.3)	179 (9.9)	179 (9.9)
Other	20	130	3	*** (****)	*** (****)	*** (****)
Nation						
English	2,456	18,404	65	254 (2.2)	250 (2.4)	254 (2.7)
Spanish	1,311	7,634	27	153 (3.8)	152 (3.8)	150 (3.9)
Other	226	2,385	8	175 (6.8)	187 (5.8)	195 (8.3)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

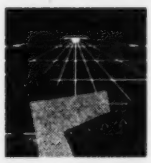
Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Nationwide, adults who said they usually speak a language other than English or Spanish performed better, on average, than adults who usually speak Spanish, but worse than adults who usually speak English. On the document scale, for example, those who reported usually speaking a language other than Spanish or English had an average score of 187 — 35 points higher than that of individuals who usually speak Spanish but 63 points lower than that of individuals who generally speak English.

Language use in various contexts

Survey respondents who said they learned a language other than English before starting school were also asked how often they use English or their other language in various contexts.

Fifty-four percent of the Ohio residents who learned another language as children said they always use English at home, while 43 percent said they sometimes speak their other language and 2 percent said they always do so (Table 4.3). Slightly more than three-quarters (78 percent) said they always use English while shopping in their neighborhoods. Twenty-nine percent said they always use English when visiting relatives or friends, while the remainder said they sometimes (69 percent) or always (2 percent) use their other language.



OHIO TABLE 4.3

Use of English or Another Language in Various Contexts by Adults Who Learned a Non-English Language: Results for Ohio

CONTEXT			*Percentage of adults who use English or another language in various contexts*		
			Always English	**Sometimes non-English language**	**Always non-English language**
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)
At home	57	391	54 (13.1)	43 (13.1)	2 (1.1)
At work	42	289	*** (****)	*** (****)	*** (****)
While shopping in own neighborhood	57	391	78 (6.4)	22 (6.4)	0†(0.0)
When visiting relatives or friends	56	387	29 (5.8)	69 (5.8)	2 (1.6)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

In sum, Ohio residents who learned another language before starting school are more likely to use only English at home or when shopping in their neighborhoods than when visiting friends or relatives. Relatively small percentages said they use only their other language, and those who sometimes do so are more likely to use it at home or when visiting friends or relatives than when shopping.

Too few Ohio respondents reported speaking another language in various contexts to provide reliable proficiency estimates.

Self-reported proficiency in the English language

One question of interest in this survey is that of self-perception. Do adults who display more limited skills in the English language perceive themselves as having restricted skills? To address this question, respondents were asked how well they understand the English language when it is spoken to them, and how well they speak, read, and write English.

Virtually all adults in Ohio described themselves as understanding (100 percent), speaking (99 percent), and reading (97 percent) English either well or very well (Table 4.4). A slightly smaller proportion perceived themselves as writing (94 percent) English well or very well.

The numbers of Ohio adults who said they do not understand, speak, or read English well (or at all) are too small to provide reliable performance estimates. Yet, state residents who described themselves as having limited writing skills scored, on average, approximately 50 to 60 points below those who said they write English well or very well. Stated differently, Ohio adults who said they do not write English well tended to perform in the low end of the Level 2 range on each literacy scale, while those who said they write well or very well performed, on average, in the low end of the Level 3 range.

It is intriguing to compare the numbers of adults who described themselves as having strong literacy skills with the numbers who performed in the highest levels of literacy defined in this survey. In Ohio, for example, the vast majority of adults described themselves as reading and writing English well or very well — yet only 19 to 23 percent reached the highest levels on the literacy scales.

It therefore appears that many adults who displayed relatively limited proficiencies in this assessment perceive that they have adequate literacy skills in English. It may be that their skills do, in fact, enable them to meet some or all of the literacy demands they encounter at work, at home, and in the community.

OHIO TABLE 4.4

Average Literacy Proficiencies, by Self-reported English Literacy: Results for Ohio

SELF-REPORTED ENGLISH LITERACY	n	WGT N (/1000)	PCT	Average proficiency of adults on each literacy scale: Prose PROF (SE)	Document PROF (SE)	Quantitative PROF (SE)
Understand						
Very well or well	1,563	8,243	100	281 (2.4)	276 (2.5)	280 (2.7)
Not well or not at all	4	13	0	*** (****)	*** (****)	*** (****)
Speak						
Very well or well	1,557	8,187	99	281 (2.4)	276 (2.5)	280 (2.7)
Not well or not at all	10	70	1	*** (****)	*** (****)	*** (****)
Read						
Very well or well	1,530	8,018	97	283 (2.8)	278 (2.8)	282 (3.1)
Not well or not at all	38	244	3	*** (****)	*** (****)	*** (****)
Write						
Very well or well	1,502	7,765	94	284 (2.7)	279 (2.7)	283 (3.0)
Not well or not at all	62	470	6	224 (9.0)	230 (8.9)	232 (7.8)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

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Literacy Practices

Previous studies have found strong connections between adults' literacy skills and their reading and writing practices — for example, the frequency with which they read the newspaper and other materials.[1] In this survey, similar connections are found, and these are discussed in the pages that follow. While reviewing the results, readers should keep in mind that the relationship between literacy skills and practices is complex. While it may be true that individuals with better skills are more likely to pursue an array of literacy activities, the experience of pursuing these activities is, in turn, also likely to strengthen their skills.

Reliance on print and nonprint sources of information

Survey participants were asked to indicate how much information about current events, public affairs, and government they get from different sources, such as newspapers, magazines, television, radio, family, and friends. For analysis purposes, these sources were grouped into three categories: print media, encompassing newspapers and magazines; nonprint media, or television and radio; and personal sources, such as family and friends.

The vast majority of respondents in Ohio (97 percent) said they get either some or a lot of information about current events, public affairs, and government from nonprint media, while 86 percent said they get much of their information from print media (Table 4.5). Approximately two-thirds (68 percent) reported getting some or a lot of information from personal sources.

Literacy proficiencies are not a good predictor of adults' reliance on television or radio for information about current events: there were essentially no differences in average prose, document, or quantitative scores between Ohio residents who said they get some or a lot of information from nonprint sources and those who get little or no information from these sources.

Nor are literacy proficiencies a good predictor of respondents' reliance on family or friends for information. On each literacy scale, the average scores of adults who said they get some or a lot of information about current events, public affairs, and government from personal sources were equivalent to those of respondents who said they get little or no information from these sources.

On the other hand, Ohio residents who said they get some or a lot of information from print media had significantly higher proficiencies (278 to 283 across the scales) than those who get little or no information from these sources (260 to 261). On the prose scale, the difference between these two

[1] I.S. Kirsch and A. Jungeblut. (1986). *Literacy: Profiles of America's Young Adults*. Princeton, NJ: Educational Testing Service.

OHIO TABLE 4.5

Average Literacy Proficiencies, by Reliance on Various Sources of Information About Current Events: Results for Ohio

RELIANCE ON VARIOUS SOURCES OF INFORMATION ABOUT CURRENT EVENTS	n	WGT N (/1000)	PCT	Average proficiency of adults on each literacy scale: Prose PROF (SE)	Document PROF (SE)	Quantitative PROF (SE)
Print media						
A lot or some	1,349	7,143	86	283 (2.7)	278 (2.7)	283 (3.0)
A little or none	218	1,115	14	261 (5.4)	260 (4.8)	260 (5.9)
Nonprint media						
A lot or some	1,520	8,040	97	281 (2.4)	276 (2.5)	280 (2.7)
A little or none	47	218	3	272 (8.6)	268 (8.7)	278 (9.8)
Personal sources						
A lot or some	1,094	5,612	68	283 (2.8)	278 (3.0)	280 (3.1)
A little or none	471	2,643	32	276 (3.3)	272 (3.0)	278 (3.7)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

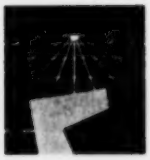
groups is 22 points, while on the document and quantitative scale, it is 18 and 23 points, respectively.

Frequency of newspaper reading

Many different types of newspapers are published in this country, ranging from long, comprehensive daily papers to shorter and less frequent community papers. Together these print media keep readers informed about current events in their communities, the nation, and the world. Because the newspaper plays such an important role in disseminating information in this society, adults who participated in the National and State Adult Literacy Surveys were asked to indicate how often they read one.

The responses indicate that newspaper reading is quite common (Table 4.6). More than half (57 percent) of the adults in Ohio said they read the newspaper every day, and another 21 percent said they read it a few times a week. Twelve percent said they read the paper once a week, 7 percent reported reading it less than once a week, and 3 percent said they never read a newspaper.

Adults who read the newspaper a few times a week tend to have higher literacy proficiencies than those who read the paper less often. For example, individuals who read the newspaper a few times a week had an average prose score of 290, compared with 272 for those who read it once a week, and 269 for those read it less than once a week. The number of Ohio adults who never read the newspaper is too small to provide reliable estimates of their proficiencies.



OHIO TABLE 4.6

Average Literacy Proficiencies, by Frequency of Newspaper Reading: Results for Ohio

FREQUENCY OF NEWSPAPER READING				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Frequency of newspaper reading						
Every day	836	4,718	57	283 (3.4)	276 (3.6)	284 (4.1)
A few times a week	355	1,725	21	290 (2.6)	287 (3.0)	287 (3.2)
Once a week	210	995	12	272 (5.9)	271 (5.6)	270 (5.3)
Less than once a week	129	612	7	269 (7.4)	270 (8.0)	269 (8.2)
Never	38	212	3	*** (****)	*** (****)	*** (****)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Aspects of newspaper reading

Survey participants were asked to indicate not only how often they read a newspaper, but also what parts they generally read. Together, the responses to these two questions were used to determine the percentages of newspaper readers — that is, of those who read a newspaper at least once a week — who read certain parts. The 10 categories listed in the survey questionnaire were grouped into five categories for reporting purposes: the news, editorial, and financial pages; home, health, fashion, and reviews of books, movies, and art; television, movie, and concert listings, as well as classified ads and other advertisements; comics, horoscopes, and advice columns; and sports.

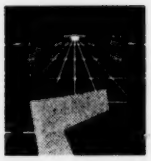
Almost all (95 percent) of the adults in Ohio who frequently read the newspaper said they read the news, editorials, or financial pages (Table 4.7). On each of the literacy scales, respondents who said they generally read these sections demonstrated better quantitative literacy skills, on average, than those who said they do not. On the prose and document scales, the differences are not statistically significant, in part because of the large standard errors.

Eighty-three percent of the newspaper readers in the state said they usually read the home, fashion, health, or reviews sections; another 87 percent said they read the advertisements or listings, and approximately 74 percent reported reading the comics, horoscopes, or advice columns. There are no significant differences in performance between adults who read these sections and those who do not.

Slightly more than half (53 percent) of the state's newspaper readers said they generally read the sports pages, and their prose and document scores are similar to those of readers who do not look at this section. Their quantitative scores are higher, however. This is a noteworthy finding, given that sports reporting in newspapers often includes quantitative measures of performance.

Magazine and book reading practices

In addition to asking respondents about their newspaper reading practices, the survey requested information on the extent to which they engage in other types of reading — in particular, reading magazines and books. Nineteen percent of the adults in Ohio said they do not read any magazines in English on a regular basis (Table 4.8). Another 35 percent read one or two, 34 percent read three to five, and 11 percent read six or more magazines regularly.



OHIO TABLE 4.7

Average Literacy Proficiencies of Adults Who Read the Newspaper Regularly, by Parts Read: Results for Ohio

PARTS OF THE NEWSPAPER GENERALLY READ	n	WGT N (/1000)	PCT	Average proficiency of adults on each literacy scale: Prose PROF (SE)	Document PROF (SE)	Quantitative PROF (SE)
News, editorials, financial news						
Yes	1,334	7,084	95	284 (2.4)	278 (2.7)	283 (2.7)
No	67	353	5	267 (8.8)	266 (6.8)	269 (6.6)
Home, fashion, health, reviews						
Yes	1,170	6,176	83	285 (2.9)	278 (3.0)	283 (2.9)
No	231	1,262	17	275 (4.8)	275 (4.9)	280 (6.3)
Advertisements, listings						
Yes	1,238	6,490	87	284 (2.6)	279 (2.9)	283 (2.7)
No	163	947	13	275 (5.6)	273 (6.0)	279 (6.6)
Comics, horoscope, advice						
Yes	1,052	5,536	74	284 (2.8)	279 (3.1)	283 (2.8)
No	349	1,901	26	279 (4.7)	276 (4.0)	282 (5.1)
Sports						
Yes	712	3,973	53	286 (3.3)	282 (3.5)	288 (3.4)
No	689	3,465	47	279 (3.9)	274 (4.2)	276 (4.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
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Source: Educational Testing Service, State Adult Literacy Survey, 1992.

OHIO TABLE 4.8

Average Literacy Proficiencies, by Magazine and Book Reading Practices: Results for Ohio

MAGAZINE AND BOOK READING (IN ENGLISH)	n	WGT N (/1000)	PCT	Average proficiency of adults on each literacy scale: Prose PROF (SE)	Document PROF (SE)	Quantitative PROF (SE)
Number of different magazines looked at or read regularly						
0	263	1,571	19	254 (3.6)	251 (4.7)	255 (4.6)
1 or 2	561	2,928	35	280 (3.9)	276 (3.8)	280 (3.8)
3 to 5	562	2,835	34	290 (4.0)	286 (4.1)	287 (4.7)
6 or more	182	927	11	296 (6.0)	287 (5.1)	296 (5.6)
Read a book in the past six months						
Yes	1,354	6,873	83	288 (2.6)	283 (2.7)	286 (3.0)
No	212	1,384	17	240 (5.0)	240 (4.4)	248 (5.0)
Types of books read in the past six months						
Fiction	830	4,019		298 (2.3)	292 (1.8)	292 (3.1)
Recreation or entertainment	515	2,428		296 (4.8)	292 (4.4)	292 (5.2)
Current affairs or history	502	2,409		296 (3.1)	287 (3.2)	290 (4.2)
Inspiration or religion	581	2,859		287 (3.6)	277 (2.9)	281 (4.4)
Science or social science	353	1,649		304 (4.4)	298 (5.0)	300 (5.3)
Reference	901	4,314		298 (2.9)	293 (3.1)	295 (4.0)
Manuals	914	4,693		293 (3.2)	287 (3.3)	291 (3.6)
Any other types	371	1,743		300 (4.7)	294 (4.2)	298 (4.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
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Source: Educational Testing Service, State Adult Literacy Survey, 1992.

When asked what books they had read in English within the past six months, 17 percent of the respondents said they had not read any books, while the remainder had read at least one. The types of books most commonly cited were reference books, manuals, and fiction. Almost two-thirds of the adults in Ohio who had read a book in the past six months said they had read a reference book (such as an encyclopedia or dictionary), and 68 percent had read a manual for cooking, operating, repairing, or building. Fifty-eight percent of the readers in the state had read a work of fiction in the past six months.

Somewhat smaller percentages of adults said they had read other types of books in English in the past half-year. Forty-two percent had read a book on inspiration or religion. About one-third (35 percent) had read a book on recreation or entertainment and 35 percent had read a book on current affairs or history. Twenty-four percent had read a science or social science book, and 25 percent reported having read some other type of book.

The relationship between adults' literacy skills and their magazine and book reading practices is quite clear. Individuals who said they read at least one magazine on a regular basis, on average, performed far better than those who do not, and the more magazines they read, the higher their average literacy scores tended to be. On the prose scale, Ohio residents who do not read any magazines on a regular basis had an average score of 254, compared with 280 for adults who read one or two magazines and 296 for adults who read six or more.

Similarly, adults who had read a book in English in the past six months performed better in the assessment than those who had not; across the literacy scales, the gap between these two groups was 38 to 48 points. In general, respondents who had not read any books in English had scores (240 to 280) in the Level 2 range, while those who had done so achieved scores (283 to 288) in the Level 3 range. There were few significant differences among respondents according to the types of books they had read.

Frequency of library use

Survey participants were asked how often they use the services of a library. Thirty percent of the adults in Ohio said they never do so, and another 33 percent said they do so only once or twice a year (Table 4.9). Twenty percent estimated that they use library services monthly, 14 percent said they do so weekly, and 3 percent said they do so every day.

In general, those who reported frequent or regular use of the library demonstrated better literacy skills than less frequent users. The differences among the groups are most evident on the prose scale, where individuals who use the library about once a week had an average score of 306, compared with only 244 — 62 points lower — for adults who never use the library.

OHIO TABLE 4.9

Average Literacy Proficiencies, by Frequency of Library Use: Results for Ohio

FREQUENCY OF LIBRARY USE				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Frequency of library use						
Daily	51	229	3	314 (12.0)!	304 (10.6)!	299 (8.8)!
Weekly	238	1,142	14	306 (3.3)	303 (3.0)	303 (3.9)
Monthly	353	1,675	20	300 (2.9)	296 (3.0)	297 (3.6)
Once or twice a year	539	2,744	33	287 (3.4)	282 (4.2)	287 (3.7)
Never	385	2,452	30	244 (4.6)	240 (4.5)	247 (4.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Amount of television watching

When asked how much television they watch each day, virtually all of the adults in Ohio (99 percent) said they watch at least some, although 15 percent said they spend no more than an hour on this pastime (Table 4.10). Twenty-five percent reported that they generally watch two hours of television a day, while 21 percent watch three hours, 16 percent watch four hours, 10 percent watch five hours, and 12 percent watch six hours or more. In all, then, more than one-third of the adults in the state (38 percent) spend four hours or more every day watching television.

There are substantial differences in literacy proficiency between adults who watch the most television and those who watch relatively little. Across the literacy scales, the average proficiencies of individuals who watch two hours of television each day range from 293 to 298, while those of respondents who

OHIO TABLE 4.10

Average Literacy Proficiencies, by Amount of Television Usually Watched Each Day: Results for Ohio

AMOUNT OF TELEVISION USUALLY WATCHED EACH DAY				Average proficiency of adults on each literacy scale		
				Prose	Document	Quantitative
	n	WGT N (/1000)	PCT	PROF (SE)	PROF (SE)	PROF (SE)
Amount of television usually watched each day						
None	20	105	1	*** (****)	*** (****)	*** (****)
1 hour or less	264	1,257	15	306 (3.9)	301 (4.6)	306 (5.3)
2 hours	405	2,086	25	297 (3.3)	293 (2.8)	298 (3.3)
3 hours	327	1,738	21	286 (5.1)	280 (5.1)	286 (5.3)
4 hours	253	1,320	16	271 (5.3)	266 (5.8)	269 (5.7)
5 hours	133	786	10	254 (8.9)	247 (8.7)	251 (7.5)
6 hours or more	165	966	12	237 (7.8)	236 (6.7)	235 (7.1)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

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Source: Educational Testing Service, State Adult Literacy Survey, 1992.

watch six hours or more range from 235 to 237 — or about 60 points lower. The prose, document, and quantitative scores of individuals who watch three or four hours of television each day are, on average, lower than those of adults who watch an hour or less, but are higher than those of adults who watch six hours of television or more on a daily basis.

Personal and job-related use of prose materials

Survey respondents were asked how often they read various types of materials in English, either for their personal use or for their current or most recent jobs. One set of questions asked how often they read or use prose materials such as letters, memos, reports, and articles. Nearly half the adults in Ohio (48 percent) said they read letters or memos every day, 20 percent read them a few times a week, 10 percent read them once a week, 16 percent read them less than once a week, and 6 percent never read them (Table 4.11). Reading reports or articles was, as might be expected, less common. In all, 30 percent of the respondents

OHIO TABLE 4.11

Types of Prose Materials Used for Personal or Job-related Reading and Writing: Results for Ohio

USE, TYPE OF PROSE MATERIAL			Percentage of adults who use each type of material				
			Every day	A few times a week	Once a week	Less than once a week	Never
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Reads or uses:							
Letters, memos	1,568	8,261	48 (1.6)	20 (1.8)	10 (1.1)	16 (1.2)	6 (0.8)
Reports, articles	1,568	8,261	30 (1.0)	28 (1.0)	16 (1.3)	15 (0.9)	11 (0.8)
Writes or fills out:							
Letters, memos	1,568	8,261	36 (1.5)	21 (1.1)	11 (1.1)	23 (1.3)	9 (0.9)
Reports, articles	1,566	8,239	18 (1.2)	13 (1.2)	13 (1.0)	21 (1.5)	36 (1.4)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

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Source: Educational Testing Service, State Adult Literacy Survey, 1992.

in the state reported reading reports or articles every day, and 28 percent said they do so a few times a week. Conversely, 11 percent reported never reading these materials.

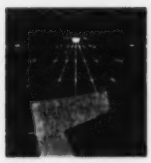
When asked how often they write letters or memos either for their own use or as part of their jobs, 36 percent of the Ohio respondents said they do so every day, and 21 percent do so a few times a week. These figures are lower than the percentages who read such materials this often. At the other end of the spectrum, 9 percent of the adults said they never write letters or memos — a little higher than the proportion who said they never read these materials.

Report and article writing was, not surprisingly, far less common than letter or memo writing, and also far less common than report or article reading. One-third (36 percent) of the adults in Ohio said they never write these types of materials. Though 44 percent said they do so at least once a week, this is still far smaller than the percentage who read these materials that often (74 percent).

Very large performance differences are found between adults who read and write prose frequently and those who do not (Table 4.12). Regardless of the activity or type of material, the average prose scores of adults who reported engaging in reading or writing every day (295 to 299) are from 49 to 79 points higher than those of adults who never engage in these activities (220 to 248).

Personal and job-related use of documents

A second set of questions asked respondents to indicate how often they read or use various types of documents. Between 25 and 33 percent of the adults in Ohio said they read or use reference books, catalogs, lists, directions,



OHIO TABLE 4.12

Average Prose Proficiency, by Types of Prose Materials Used for Personal or Job-related Reading and Writing: Results for Ohio

USE, TYPE OF PROSE MATERIAL			*Average prose proficiency of adults who use each type of material*				
			Every day	A few times a week	Once a week	Less than once a week	Never
	n	WGT N (/1000)	PROF (SE)	PROF (SE)	PROF (SE)	PROF (SE)	PROF (SE)
Reads or uses:							
Letters, memos	1,568	8,261	295 (3.7)	284 (5.5)	276 (3.4)	256 (7.5)	223 (8.1)
Reports, articles	1,568	8,261	298 (4.4)	289 (4.8)	281 (4.3)	268 (6.6)	226 (5.8)
Writes or fills out:							
Letters, memos	1,568	8,261	299 (4.0)	294 (3.4)	269 (7.4)	267 (5.8)	220 (9.1)
Reports, articles	1,566	8,239	297 (4.6)	304 (5.5)	298 (4.6)	297 (2.9)	248 (4.2)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

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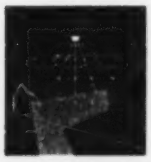
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

instructions, bills, or spreadsheets every day, and an equivalent percentage said they do so a few times a week (Table 4.13). On the other hand, 8 to 14 percent said they never use these types of documents.

The use of diagrams or schematics was less common. Fourteen percent of the respondents said they read or use these types of documents every day, while 39 percent reported never using them. When asked how often they write or fill out forms, bills, or budgets, about one-quarter (26 percent) of the adults in Ohio said they do so every day, and another 21 percent reported doing so a few times a week, while 12 percent said they never do.



OHIO TABLE 4.13

Types of Documents Used for Personal or Job-related Reading and Writing: Results for Ohio

USE, TYPE OF DOCUMENT			Percentage of adults who use each type of document				
			Every day	A few times a week	Once a week	Less than once a week	Never
	n	WGT N (/1000)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)
Reads or uses:							
Reference books, catalogs, lists	1,568	8,261	25 (2.2)	22 (1.4)	17 (1.5)	21 (0.9)	14 (1.1)
Directions, instructions	1,567	8,257	27 (2.0)	25 (1.0)	16 (0.8)	23 (1.9)	8 (0.9)
Diagrams, schematics	1,567	8,250	14 (1.0)	12 (0.9)	11 (0.9)	24 (1.5)	39 (1.4)
Bills, spreadsheets	1,568	8,261	33 (1.3)	25 (1.4)	17 (1.2)	16 (1.2)	9 (0.9)
Writes or fills out:							
Forms, bills, budgets	1,568	8,261	26 (1.5)	21 (0.8)	19 (1.1)	23 (1.7)	12 (1.0)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); RPCT = row percentage estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

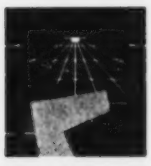
† Percentages less than 0.5 are rounded to zero.
••• Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Once again, adults who frequently use various types of documents outperformed those who do not (Table 4.14). For example, the average document scores of Ohio survey participants who said they read or use reference books, catalogs, or lists either every day or a few times a week are 66 to 75 points higher than those of participants who never read or use these materials. These performance gaps also exist for the other types of documents examined, yet the differences are smaller, ranging from 28 to 54 points.

Personal use of mathematics

Respondents were also asked to indicate how often they use arithmetic or mathematics — that is, addition, subtraction, multiplication, division, or measurement. Half of the survey respondents in Ohio said they use mathematics every day, and approximately one-quarter (28 percent) reported using it a few times a week (Table 4.15). Nine to 10 percent said they use it once a week or less often, and 3 percent said they never use mathematics.



OHIO TABLE 4.14

Average Document Proficiency, by Types of Documents Used for Personal or Job-related Reading and Writing: Results for Ohio

USE, TYPE OF DOCUMENT			Average document proficiency of adults who use each type of document				
			Every day	A few times a week	Once a week	Less than once a week	Never
	n	WGT N (/1000)	PROF (SE)	PROF (SE)	PROF (SE)	PROF (SE)	PROF (SE)
Reads or uses:							
Reference books, catalogs, lists	1,568	8,261	296 (4.8)	287 (4.5)	282 (6.3)	271 (3.5)	221 (6.6)
Directions, instructions	1,567	8,257	275 (4.9)	285 (4.6)	275 (4.6)	278 (5.1)	247 (6.7)
Diagrams, schematics	1,567	8,250	293 (5.5)	300 (5.5)	294 (5.2)	295 (4.5)	246 (3.6)
Bills, spreadsheets	1,568	8,261	283 (3.8)	291 (3.2)	278 (5.0)	256 (6.9)	241 (7.7)
Writes or fills out:							
Forms, bills, budgets	1,568	8,261	292 (3.9)	287 (4.8)	286 (3.5)	258 (5.8)	239 (5.5)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

As expected, adults who said they rarely use mathematics were far more likely than those who use it frequently to perform in the lowest levels of quantitative literacy. Forty-one percent of the respondents who said they use math less than once a week were in Level 1 on the quantitative scale, and another 32 percent were in Level 2; conversely, just 4 percent reached Level 4, and only 1 percent attained Level 5. As a result, their average quantitative proficiency is quite low (239), falling within the range for Level 2.

In contrast, far lower percentages of respondents who use mathematics every day performed in the lowest levels of quantitative literacy (11 percent in Level 1, 25 percent in Level 2) and far higher percentages reached the two highest levels (24 percent in Level 4, 5 percent in Level 5). As a result, their average quantitative proficiency is quite high (293). Still, it is interesting to note that so many of the individuals who use mathematics every day performed in Levels 1 and 2. It appears that ability is not the sole predictor of mathematics use, and that many adults with limited quantitative skills are called upon to use these skills often.

OHIO TABLE 4.15

Quantitative Literacy Levels and Average Proficiencies, by Frequency of Arithmetic or Mathematics Use: Results for Ohio

FREQUENCY OF ARITHMETIC OR MATHEMATICS USE				Percentage of adults in each quantitative literacy level					
				Level 1 225 or lower	Level 2 226 to 275	Level 3 276 to 325	Level 4 326 to 375	Level 5 376 or higher	Average Proficiency
	n	WGT N (/1000)	PCT	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	RPCT (SE)	PROF (SE)
Every day	793	4,126	50	11 (2.1)	25 (3.2)	35 (3.2)	24 (2.2)	5 (1.5)	293 (3.8)
A few times a week	443	2,332	28	15 (2.6)	28 (2.8)	35 (3.8)	18 (2.2)	4 (1.3)	283 (4.1)
Once a week	164	749	9	23 (5.8)	28 (5.1)	34 (5.4)	14 (4.0)	1 (0.7)	269 (6.3)
Less than once a week	134	804	10	41 (8.7)	32 (7.3)	22 (6.4)	4 (2.8)	1 (0.4)	239 (9.1)
Never	33	248	3	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)	*** (****)

n = sample size; WGT N = population size estimate / 1,000 (the sample sizes for subpopulations may not add up to the total sample sizes, due to missing data); PCT = percentage in group; RPCT = row percentage estimate; PROF = average proficiency estimate; (SE) = standard error of the estimate (the reported sample estimate can be said to be within 2 standard errors of the true population value with 95% confidence).

† Percentages less than 0.5 are rounded to zero.
*** Sample size is insufficient to permit a reliable estimate (fewer than 45 respondents).
! Interpret with caution -- the nature of the sample does not allow accurate determination of the variability of this statistic.

Source: Educational Testing Service, State Adult Literacy Survey, 1992.

Summary

More than 90 percent of the survey respondents in Ohio and the Midwest said they learned only English before beginning their schooling. In Ohio there were too few adults who learned another language as children to make reliable comparisons. In the region and nation, though, individuals who spoke only English before beginning their schooling demonstrated higher average proficiencies than adults who learned another language either in addition to or instead of English.

Virtually all of the adults in Ohio described themselves as speaking, understanding, and reading English either well or very well (97 to 100 percent), and a slightly smaller proportion perceived themselves as writing it well or very well (94 percent). Those who described themselves as having limited writing skills do, in fact, demonstrate lower proficiencies than those who rated their skills more highly. Yet, far more adults demonstrated limited proficiencies than reported perceived limitations.

Ninety-seven percent of the Ohio respondents said they get some or a lot of information about current events, public affairs, or government from nonprint media, and 86 percent said they get some or a lot of information from print media. Approximately two-thirds reported getting some or a lot of information from personal sources, such as family or friends. Ohio residents who said they get some or a lot of information from print media had significantly higher literacy scores than those who get little or no information from these sources.

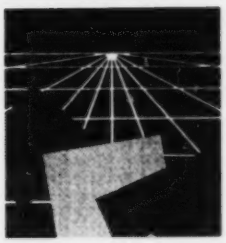
The survey results indicate that newspaper reading is quite common. More than half the adults in Ohio (57 percent) said they read the newspaper every day, and another 21 percent reported reading it a few times a week. Only 3 percent said they never read a newspaper. Individuals who said they rarely read a newspaper had lower proficiencies, on average, than adults who read one more often.

Nineteen percent of the adults in Ohio said they do not read any magazines in English on a regular basis, while the remainder reported reading at least one. Similarly, 17 percent of the survey respondents said they had not read any books in English in the past six months, while the remainder had read at least one. Individuals who read at least one magazine on a regular basis performed far better than those who do not, and the more magazines they read, the higher their average literacy scores tended to be. Similarly, adults who had read a book in English in the past six months performed better in the assessment than those who had not.

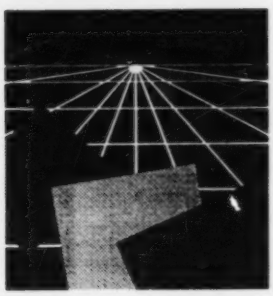
When asked how often they use a library, 30 percent of the adults in Ohio said they never do, and one-third said they do so only once or twice a year. In general, those who reported frequent use of a library demonstrated better literacy skills than infrequent users.

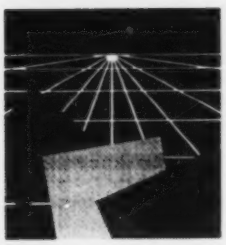
Virtually all respondents in Ohio said they watch at least some television each day, although 15 percent said they spend no more than an hour on this pastime. The remainder watch at least two hours of television a day. Adults who watch the most television demonstrated far lower proficiencies in the assessment, on average, than individuals who watch relatively little.

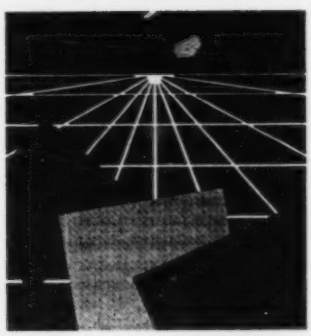
Finally, survey respondents were asked how often they read or use various types of materials in English, either for their personal use or for their jobs. There are large differences in prose proficiency between adults who read and write prose frequently and those who never do so. Similarly, adults who often use various types of documents had higher average document proficiencies than those who do not. Adults who said they rarely use mathematics were far more likely than those who use it frequently to perform in the lowest levels of quantitative literacy.

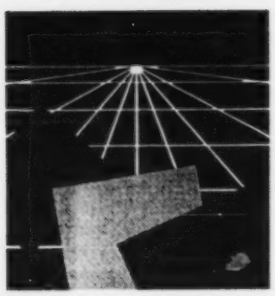


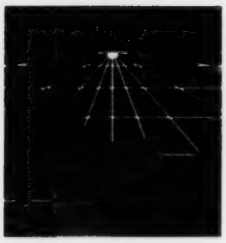
SECTION V











SECTION V

Interpreting the Literacy Scales

Building on the two earlier literacy surveys conducted by Educational Testing Service (ETS), the performance results from the National and State Adult Literacy Surveys are reported on three literacy scales — prose, document, and quantitative — rather than on a single conglomerate scale. Each of the three literacy scales ranges from 0 to 500.

The purpose of this section of the report is to give meaning to the literacy scales — or, more specifically, to interpret the numerical scores that are used to represent adults' proficiencies on these scales. Toward this end, the section begins with a brief summary of the task development process and of the way in which the literacy levels are defined. A detailed description of the prose, document, and quantitative scales is then provided. The five levels on each scale are defined, and the skills and strategies needed to successfully perform the tasks in each level are discussed. Sample tasks are presented to illustrate the types of materials and task demands that characterize the levels on each scale. The section ends with a brief summary of the probabilities of successful performance on tasks within each level for individuals who demonstrated different proficiencies.

Building the Literacy Tasks

The literacy scales make it possible not only to summarize the literacy proficiencies of the total population and of various subpopulations, but also to determine the relative difficulty of the literacy tasks administered in the survey. That is, just as an individual receives a score according to his or her performance on the assessment tasks, each task receives a value according to its difficulty as determined by the performance of the adults who participated in the survey. Previous research conducted at ETS has shown that the difficulty of a literacy task, and therefore its placement on a particular literacy scale, is determined by three factors: the structure or linguistic format of the material,

the content and/or the context from which it is selected, and the nature of the task, or what the individual is asked to do with the material.

Materials. The materials selected for inclusion in the survey reflect a variety of linguistic formats that adults encounter in their daily activities. Most of the prose materials used in the survey are expository — that is, they describe, define, or inform — since most of the prose that adults read is expository in nature; however, narratives and poetry are included, as well. The prose materials include an array of linguistic structures, ranging from texts that are highly organized both topically and visually to those that are loosely organized. They also include texts of varying lengths, from multiple-page magazine selections to short newspaper articles. All prose materials included in the survey were reproduced in their original format.

The document materials represent a wide variety of structures, which are characterized as tables, charts and graphs, forms, and maps, among other categories. Tables include matrix documents in which information is arrayed in rows and columns — for example, bus or airplane schedules, lists, or tables of numbers. Documents categorized as charts and graphs include pie charts, bar graphs, and line graphs. Forms are documents that require information to be filled in, while other structures include such materials as advertisements and coupons.

The quantitative tasks require the reader to perform arithmetic operations using numbers that are embedded in print. Since there are no materials that are unique to quantitative tasks, these tasks were based on prose materials and documents. Most quantitative tasks were, in fact, based on document structures.

Content and/or Contexts. Adults do not read printed or written materials in a vacuum. Rather, they read within a particular context or for a particular purpose. Accordingly, the survey materials represent a variety of contexts and contents. Six such areas were identified: home and family; health and safety; community and citizenship; consumer economics; work; and leisure and recreation.

In selecting materials to represent these areas, efforts were made to include as broad a range as possible, as well as to select universally relevant contexts and contents. This was to ensure that the materials would not be so specialized as to be familiar only to certain groups. In this way, disadvantages for individuals with limited background knowledge were minimized.

Types of Tasks. After the materials were selected, tasks were developed to accompany the materials. These tasks were designed to simulate the ways in which people use various types of materials and to require different strategies for successful task completion. For both the prose and document scales, the tasks can be organized into three major categories: *locating, integrating,* and

generating information. In the locating tasks, readers are asked to match information that is given in a question or directive with either literal or synonymous information in the text or document. Integrating tasks require the reader to incorporate two or more pieces of information located in different parts of the text or document. Generating tasks require readers not only to process information located in different parts of the material, but also to go beyond that information by drawing on their knowledge about a subject or by making broad text-based inferences.

Quantitative tasks require readers to perform arithmetic operations — addition, subtraction, multiplication, or division — either singly or in combination. In some tasks, the type of operation that must be performed is obvious from the wording of the question, while in other tasks the readers must infer which operation is to be performed. Similarly, the numbers that are required to perform the operation can, in some cases, be easily identified, while in others, the numbers that are needed are embedded in text. Moreover, some quantitative tasks require the reader to explain how the problem would be solved rather than perform the calculation, and on some tasks the use of a simple four-function calculator is required.

Defining the Literacy Levels

The relative difficulty of the assessment tasks reflects the interactions among the various task characteristics described here. As shown in Figure 1 in the Introduction to this report, the score point assigned to each task is the point at which the individuals with that proficiency score have a high probability of responding correctly. In this survey, an 80 percent probability of correct response was the criterion used. While some tasks were at the very low end of the scale and some at the very high end, most had difficulty values in the 200 to 400 range.

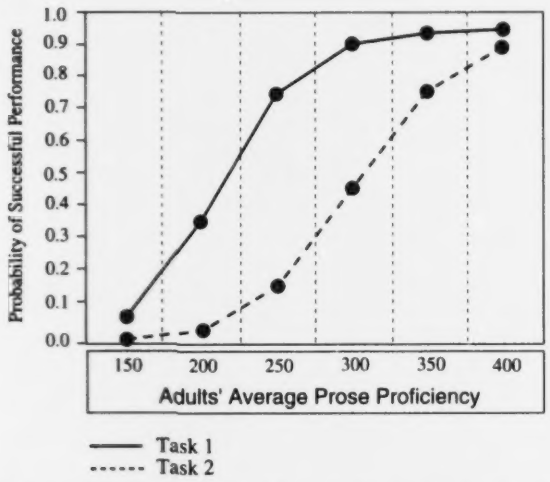
By assigning scale values to both the individuals and tasks, it is possible to see how well adults with varying proficiencies performed on tasks of varying difficulty. While individuals with low proficiency tend to perform well on tasks with difficulty values equivalent to or below their level of proficiency, they are less likely to succeed on tasks with higher difficulty values. This does not mean that individuals with low proficiency can never succeed on more difficult literacy tasks — that is, on tasks whose difficulty values are higher than their proficiencies. They may do so some of the time. Rather, it means that their probability of success is not as high. In other words, the more difficult the task relative to their proficiency, the lower their likelihood of responding correctly.

The response probabilities for two tasks on the prose scale are displayed in Figure 5.1. The difficulty of the first task is measured at the 250 point on the scale, and the second task is at the 350 point. This means that an individual would have to score at the 250 point on the prose scale to have an 80 percent chance (that is, a .8 probability) of responding correctly to Task 1. Adults scoring at the 200 point on the prose scale have only a 40 percent chance of responding correctly to this task, whereas those scoring at the 300 point and above would be expected to rarely miss this task and others like it.

In contrast, an individual would need to score at the 350 point to have an 80 percent chance of responding correctly to Task 2. While individuals performing at the 250 point would have an 80 percent chance of success on the first task, their probability of answering the more difficult second task correctly is only 20 percent. An individual scoring at the 300 point is likely to succeed on this more difficult task only half the time.

NALS **Figure 5.1**

Probabilities of Successful Performance on Two Prose Tasks by Individuals at Selected Points on the Prose Scale



Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

An analogy may help clarify the information presented for the two prose tasks. The relationship between task difficulty and individual proficiency is much like the high jump event in track and field, in which an athlete tries to jump over a bar that is placed at increasing heights. Each high jumper has a height at which he or she is proficient. That is, he or she is able to clear the bar at that height with a high probability of success, and can clear the bar at lower

levels almost every time. When the bar is higher than their level of proficiency, however, they can be expected to have a much lower chance of clearing it successfully.

Once the literacy tasks are placed on their respective scales, using the criterion described here, it is possible to see how well the interactions among the task characteristics explain the placement of various tasks along the scales.[1] In investigating the progression of task characteristics across the scales, certain questions are of interest. Do tasks with similar difficulty values (that is, with difficulty values near one another on a scale) have certain shared characteristics? Do these characteristics differ in systematic ways from tasks in either higher or lower levels of difficulty? Analyses of the interactions between the materials read and the tasks based on these materials reveal that an ordered set of information-processing skills appears to be called into play to perform the range of tasks along each scale.

To capture this ordering, each scale was divided into five levels that reflect the progression of information-processing skills and strategies: Level 1 (0 to 225), Level 2 (226 to 275), Level 3 (276 to 325), Level 4 (326 to 375), and Level 5 (376 to 500). These levels were determined not as a result of any statistical property of the scales, but rather as a result of shifts in the skills and strategies required to succeed on various tasks along the scales, from simple to complex.

The remaining pages of this section describe each scale in terms of the nature of the task demands at each of the five levels. After a brief introduction to each scale, sample tasks in each level are presented and the factors contributing to their difficulty are discussed. The aim of these discussions is to give meaning to the scales and to facilitate interpretation of the results provided in the first and second sections of this report.

Interpreting the Literacy Levels

Prose literacy

The ability to understand and use information contained in various kinds of textual material is an important aspect of literacy. Most of the prose materials administered in this assessment were expository — that is, they inform, define, or describe — since these constitute much of the prose that adults read. Some narrative texts and poems were included, as well. The prose materials were drawn from newspapers, magazines, books, brochures, and pamphlets and reprinted in their entirety, using the typography and layout of the original source. As a result, the materials vary widely in length, density of information,

[1] I.S. Kirsch and P.B. Mosenthal. (1990). "Exploring Document Literacy: Variables Underlying the Performance of Young Adults." *Reading Research Quarterly*, 25. pp. 5-30.

and the use of structural or organizational aids such as section or paragraph headings, italic or bold face type, and bullets.

Each prose selection was accompanied by one or more questions or directives which asked the reader to perform specific tasks. These tasks represent three major aspects of information-processing: locating, integrating, and generating. Locating tasks require the reader to find information in the text based on conditions or features specified in the question or directive. The match may be literal or synonymous, or the reader may need to make a text-based inference in order to perform the task successfully. Integrating tasks ask the reader to compare or contrast two or more pieces of information from the text. In some cases the information can be found in a single paragraph, while in others it appears in different paragraphs or sections. In the generating tasks, readers must produce a written response by making text-based inferences or drawing on their own background knowledge.

In all, the prose literacy scale includes 41 tasks with difficulty values ranging from 149 to 468. It is important to remember that the locating, generating, and integrating tasks extend over a range of difficulty as a result of interactions with other variables including:

- the number of categories or features of information that the reader must process
- the number of categories or features of information in the text that can distract the reader, or that may seem plausible but are incorrect
- the degree to which information given in the question is obviously related to the information contained in the text
- the length and density of the text

The five levels of prose literacy are defined, and sample tasks provided, in the following pages.

Prose Level 1 Scale range: 0 to 225

Most of the tasks in this level require the reader to read relatively short text to locate a single piece of information which is identical to or synonymous with the information given in the question or directive. If plausible but incorrect information is present in the text, it tends not to be located near the correct information.

Percentage of adults in the state performing in this level: 16%
Percentage of adults in the nation performing in this level: 21%

Tasks in this level require the reader to locate and match a single piece of information in the text. Typically the match between the question or directive and the text is literal, although sometimes synonymous matches may be necessary. The text is usually brief or has organizational aids such as paragraph headings or italics that suggest where in the text the reader should search for the specified information. The word or phrase to be matched appears only once in the text.

One task in Level 1 with a difficulty value of 210 asks respondents to read a newspaper article about a marathon swimmer and to underline the sentence that tells what she ate during a swim. Only one reference to food is contained in the passage, and it does not use the word "ate." Rather, the article says the swimmer "kept up her strength with banana and honey sandwiches, hot chocolate, lots of water and granola bars." The reader must match the word "ate" in the directive with the only reference to foods in the article.

Underline the sentence that tells what Ms. Chanin ate during the swim.

Swimmer completes Manhattan marathon

The Associated Press

NEW YORK—University of Maryland senior Stacy Chanin on Wednesday became the first person to swim three 28-mile laps around Manhattan.

Chanin, 23, of Virginia, climbed out of the East River at 96th Street at 9:30 p.m. She began the swim at noon on Tuesday.

A spokesman for the swimmer, Roy Brunett, said Chanin had kept up her strength with "banana and honey" sandwiches, hot chocolate, lots of water and granola bars."

Chanin has twice circled Manhattan before and trained for the new feat by swimming about 28.4 miles a week. The Yonkers native has competed as a swimmer since she was 15 and hoped to persuade Olympic authorities to add a long-distance swimming event.

The Leukemia Society of America solicited pledges for each mile she swam.

In July 1983, Julie Ridge became the first person to swim around Manhattan twice. With her three laps, Chanin came up just short of Diana Nyad's distance record, set on a Florida-to-Cuba swim.

Reduced from original copy.

Prose Level 2 Scale range: 226 to 275

Some tasks in this level require readers to locate a single piece of information in the text; however, several distractors or plausible but incorrect pieces of information may be present, or low-level inferences may be required. Other tasks require the reader to integrate two or more pieces of information or to compare and contrast easily identifiable information based on a criterion provided in the question or directive.

Percentage of adults in the state performing in this level: 29%
Percentage of adults in the nation performing in this level: 27%

Like the tasks in Level 1, most of the tasks in this level ask the reader to locate information. However, these tasks place more varied demands on the reader. For example, they frequently require readers to match more than a single piece of information in the text and to discount information that only partially satisfies the question. If plausible but incomplete information is included in the text, such distractors do not appear near the sentence or paragraph that contains the correct answer. For example, a task based on the sports article reproduced earlier asks the reader to identify the age at which the marathon swimmer began to swim competitively. The article first provides the swimmer's current age of 23, which is a plausible but incorrect answer. The correct information, age 15, is found toward the end of the article.

In addition to directing the reader to locate more than a single piece of information in the text, low-level inferences based on the text may be required to respond correctly. Other tasks in Level 2 (226 to 275) require the reader to identify information that matches a given criterion. For example, in one task with a difficulty value of 275, readers were asked to identify specifically what was wrong with an appliance by choosing the most appropriate of four statements describing its malfunction.

A manufacturing company provides its customers with the following instructions for returning appliances for service:

> When returning appliance for servicing, include a note telling as clearly and as specifically as possible what is wrong with the appliance.

A repair person for the company receives four appliances with the following notes attached. Circle the letter next to the note which best follows the instructions supplied by the company.

A The clock does not run correctly on this clock radio. I tried fixing it, but I couldn't.

B My clock radio is not working. It stopped working right after I used it for five days.

C The alarm on my clock radio doesn't go off at the time I set. It rings 15-30 minutes later.

D This radio is broken. Please repair and return by United Parcel Service to the address on my slip.

Readers in this level may also be asked to infer a recurring theme. One task with a difficulty value of 262 asks respondents to read a poem that uses several metaphors to represent a single, familiar concept and to identify its theme. The repetitiveness and familiarity of the allusions appear to make this "generating" task relatively easy.

Prose Level 3 Scale range: 276 to 325

Tasks in this level tend to require readers to make literal or synonymous matches between the text and information given in the task, or to make matches that require low-level inferences. Other tasks ask readers to integrate information from dense or lengthy text that contains no organizational aids such as headings. Readers may also be asked to generate a response based on information that can be easily identified in the text. Distracting information is present, but is not located near the correct information.

Percentage of adults in the state performing in this level: 34%
Percentage of adults in the nation performing in this level: 32%

One of the easier Level 3 tasks requires the reader to write a brief letter explaining that an error has been made on a credit card bill. This task is at 288 on the prose scale. Other tasks in this level require the reader to search fairly dense text for information. Some of the tasks ask respondents to make a literal or synonymous match on more than a single feature, while other tasks ask them to integrate multiple pieces of information from a long passage that does not contain organizational aids.

One of the more difficult Level 3 tasks (with a difficulty value of 316) requires the reader to read a magazine article about an Asian-American woman and to provide two facts that support an inference made from the text. The question directs the reader to identify what Ida Chen did to help resolve conflicts due to discrimination.

List two things that Chen became involved in or has done to help resolve conflicts due to discrimination.

IDA CHEN is the first Asian-American woman to become a judge of the Commonwealth of Pennsylvania.

She understands discrimination because she has experienced it herself.

Soft-spoken and eminently dignified, Judge Ida Chen prefers hearing about a new acquaintance rather than talking about herself. She wants to know about career plans, hopes, dreams, fears. She gives unsolicited advice as well as encouragement. She instills confidence.

Her father once hoped that she would become a professor. And she would have also made an outstanding social worker or guidance counselor. The truth is that Chen wears the caps of all these professions as a Family Court judge of the Court of Common Pleas of Philadelphia County, as a participant in public advocacy for minorities, and as a particularly sensitive, caring person.

She understands discrimination because she has experienced it herself. As an elementary school student, Chen tried to join the local Brownie troop. "You can't be a member," she was told. "Only American girls are in the Brownies."

Originally intent upon a career as a journalist, she selected Temple University because of its outstanding journalism department and affordable tuition. Independence being a personal need, she paid for her tuition by working for Temple's Department of Criminal Justice. There she had her first encounter with the legal world and it turned her career plans in a new direction — law school.

Through meticulous planning, Chen was able to earn her undergraduate degree in two and a half years and she continued to work three jobs. But when she began her first semester as a Temple law student in the fall of 1973, she was barely able to stay awake. Her teacher Lynne Abraham, now a Common Pleas Court judge herself, couldn't help but notice Chen yawning in the back of the class, and when she determined that this student was not a party animal but a workhorse, she arranged a teaching assistant's job for Chen on campus.

After graduating from Temple Law School in 1976, Chen worked for the U.S. Equal Employment Opportunity Commission where she was a litigator on behalf of plaintiffs who experienced discrimination in the workplace, and then moved on to become the first Asian-American to serve on the Philadelphia Commission on Human Relations.

Appointed by Mayor Wilson Goode, Chen worked with community leaders to resolve racial and ethnic tensions and also made time to contribute free legal counsel to a variety of activist groups.

The "Help Wanted" section of the newspaper contained an entry that aroused Chen's curiosity — an ad for a judge's position. Her application resulted in her selection by a state judicial committee to fill a seat in the state court. And in July of 1988, she officially became a judge of the Court of Common Pleas. Running as both a Republican and Democratic candidate, her position was secured when she won her seat on the bench at last November's election.

At Family Court, Chen presides over criminal and civil cases which include adult sex crimes, domestic violence, juvenile delinquency, custody, divorce and support. Not a pretty picture.

Chen recalls her first day as judge, hearing a juvenile dependency case — "It was a horrifying experience. I broke down because the cases were so depressing," she remembers.

Outside of the courtroom, Chen has made a name for herself in resolving interracial conflicts, while glorying in her Chinese-American identity. In a 1986 incident involving the desecration of Korean street signs in a Philadelphia neighborhood, Chen called for a meeting with the leaders of that community to help resolve the conflict.

Chen's interest in community advocacy is not limited to Asian communities. She has been involved in Hispanic, Jewish and Black issues, and because of her participation in the Ethnic Affairs Committee of the Anti-Defamation League of B'nai B'rith, Chen was one of 10 women nationwide selected to take part in a mission to Israel.

With her recently won mandate to judicate in the affairs of Pennsylvania's citizens, Chen has pledged to work tirelessly to defend the rights of its people and contribute to the improvement of human welfare. She would have made a fabulous Brownie.

— Jessica Schultz

Prose Level 4 Scale range: 326 to 375

These tasks require readers to perform multiple-feature matches and to integrate or synthesize information from complex or lengthy passages. More complex inferences are needed to perform successfully. Conditional information is frequently present in tasks in this level and must be taken into consideration by the reader.

Percentage of adults in the state performing in this level: 18%
Percentage of adults in the nation performing in this level: 17%

A prose task with a difficulty value of 328 requires the reader to synthesize the repeated statements of an argument from a newspaper column in order to generate a theme or organizing principle. In this instance, the supporting statements are elaborated in different parts of a lengthy text.

A more challenging task (with a difficulty value of 359) directs the reader to contrast the two opposing views stated in the newspaper feature reprinted here that discusses the existence of technologies that can be used to produce more fuel-efficient cars.

Contrast Dewey's and Hanna's views about the existence of technologies that can be used to produce more fuel-efficient cars while maintaining the size of the cars.

Face-Off: Getting More Miles Per Gallon

Demand cars with better gas mileage

By Robert Dewey
Guest columnist

WASHINGTON — Warning: Automakers are resurrecting their heavy-metal dinosaurs, aka gas guzzlers.

Government reports show that average new-car mileage has declined to 28.2 miles per gallon — the 1986 level. To reverse this trend, Congress must significantly increase existing gas-mileage standards.

More than half our Nobel laureates and 700 members of the National Academy of Sciences recently called global warming "the most serious environmental threat of the 21st century." In 1989, oil imports climbed to a near-record 46% of U.S. consumption. Increasing gas mileage is the single biggest step we can take to reduce oil imports and curb global warming. Greater efficiency also lowers our trade deficit (oil imports represent 40% of it) and decreases the need to drill in pristine areas.

Bigger engines and bigger cars mean bigger profits for automakers, who offer us the products they want us to buy. More than ever, Americans want products that have less of an environmental impact. But with only a few fuel-efficient cars to choose from, how do we find ones that meet all our needs?

Government studies show automakers have the technology to dramatically improve gas mileage — while maintaining the 1987 levels of comfort, performance and size mix of vehicles. Automakers also have the ability to make their products safer. The cost of these improvements will be offset by savings at the gas pump!

Cars can average 45 mpg and light trucks 35 mpg primarily by utilizing engine and transmission technologies already on a few cars today. Further improvements are possible by using technologies like the two-stroke engine and better aerodynamics that have been developed but not used.

When the current vehicle efficiency standards were proposed in 1974, Ford wrongly predicted that they "would require either all sub-Pinto-sized vehicles or some mix of vehicles ranging from a sub-subcompact to perhaps a Maverick." At that time, Congress required a 100% efficiency increase; raising gas mileage to 45 mpg requires only a 60% increase.

Americans want comfortable, safe and efficient cars. If automakers won't provide them, Congress must mandate them when it considers the issue this summer.

Let's hope lawmakers put the best interest of the environment and the nation ahead of the automakers' lobbyists and political action committees.

Robert Dewey is a conservation analyst for the Environmental Action Foundation.

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Don't demand end to cars people want

By Thomas H. Hanna
Guest columnist

DETROIT — Do Americans look forward to the day when they'll have to haul groceries, shuttle the kids to and from school or take family vacations in compact and subcompact cars?

I doubt it — which is why U.S. and import carmakers oppose the 40-miles-per-gallon to 45 mpg corporate average fuel economy mandates that some are pushing in Congress, either to curb tailpipe carbon dioxide emissions because of alleged global warming or for energy conservation.

Since the mid-1970s, automakers have doubled the fleet average fuel economy of new cars to 28 mpg — and further progress will be made.

Compact and subcompact cars with mileage of 40 mpg or better are now available, yet they appeal to only 5% of U.S. car buyers.

But to achieve a U.S. fleet average of 40 mpg to 45 mpg, carmakers would have to sharply limit the availability of family-size models and dramatically trim the size and weight of most cars.

There simply are not magic technologies to meet such a standard.

Almost every car now sold in the USA would have to be drastically downsized, and many would be obsolete.

As a result, Americans each year would be unable to buy the vehicles most suited for their needs: mid- and family-size models, luxury automobiles, mini-vans, small trucks and utility vehicles.

The fleet shift to compacts and subcompacts could also force the closing of assembly plants, supplier firms and dealerships, at a cost of thousands of U.S. jobs.

Although a growing number of scientists are skeptical of global warming, the issue deserves thorough international scientific evaluation, not premature unilateral U.S. action.

Carbon dioxide emissions from U.S. vehicles total less than 2.5% of worldwide "greenhouse" gases. Even doubling today's corporate average fuel economy for U.S. cars — if technically possible — would cut those gases about .5%

Whatever the motivation — alleged global warming or energy conservation — the stakes are high for millions of Americans and thousands of U.S. jobs in unrealistic corporate average fuel economy mandates.

Thomas H. Hanna is president and chief executive officer of the Motor Vehicle Manufacturers Association of the United States.

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Two other tasks in Level 4 on the prose scale require the reader to draw on background knowledge in responding to questions asked about two poems. In one they are asked to generate an unfamiliar theme from a short poem (difficulty value of 362), and in the other they are asked to compare two metaphors (value of 374).

Prose Level 5 Scale range: 376 to 500

Some tasks in this level require the reader to search for information in dense text which contains a number of plausible distractors. Others ask readers to make high-level inferences or use specialized background knowledge. Some tasks ask readers to contrast complex information.

Percentage of adults in the state performing in this level: 3%
Percentage of adults in the nation performing in this level: 3%

Two tasks in Level 5 require the reader to search for information in dense text containing several plausible distractors. One such task (difficulty value of 410) requires the respondent to read information about jury selection and service. The question requires the reader to interpret information to identify two ways in which prospective jurors may be challenged.

Identify and summarize the two kinds of challenges that attorneys use while selecting members of a jury.

DO YOU HAVE A QUESTION?

QUESTION: What is the new program for scheduling jurors?

ANSWER: This is a new way of organizing and scheduling jurors that is being introduced all over the country. The goals of this program are to save money, increase the number of citizens who are summoned to serve and decrease the inconvenience of serving.

The program means that instead of calling jurors for two weeks, jurors now serve only one day, or for the length of one trial if they are selected to hear a case. Jurors who are not selected to hear a case are excused at the end of the day, and their obligations to serve as jurors are fulfilled for three years. The average trial lasts two days once testimony begins.

An important part of what is called the One Day – One Trial program is the "standby" juror. This is a person called to the Courthouse if the number of cases to be tried requires more jurors than originally estimated. Once called to the Courthouse, the standby becomes a "regular" juror, and his or her service is complete at the end of one day or one trial, the same as everyone else.

Q. How was I summoned?

A. The basic source for names of eligible jurors is the Driver's License list which is supplemented by the voter registration list. Names are chosen from these combined lists by a computer in a completely random manner.

Once in the Courthouse, jurors are selected for a trial by this same computer and random selection process.

Q. How is the Jury for a particular trial selected?

A. When a group of prospective jurors is selected, more than the number needed for a trial are called. Once this group has been seated in the courtroom, either the Judge or the attorneys ask questions. This is called *voir dire*. The purpose of questions asked during *voir dire* is to ensure that all of the jurors who are selected to hear the case will be unbiased, objective and attentive.

In most cases, prospective jurors will be asked to raise their hands when a particular question applies to them. Examples of questions often asked are: Do you know the Plaintiff, Defendant or the attorneys in this case? Have you been involved in a case similar to this one yourself? Where the answer is yes, the jurors raising hands may be asked additional questions, as the purpose is to guarantee a fair trial for all parties. When an attorney believes that there is a legal reason to excuse a juror, he or she will challenge the juror for cause. Unless both attorneys agree that the juror should be excused, the Judge must either sustain or override the challenge.

After all challenges for cause have been ruled upon, the attorneys will select the trial jury from those who remain by exercising peremptory challenges. Unlike challenges for cause, no reason need be given for excusing a juror by peremptory challenge. Attorneys usually exercise these challenges by taking turns striking names from a list until both are satisfied with the jurors at the top of the list or until they use up the number of challenges allowed. Challenged jurors and any extra jurors will then be excused and asked to return to the jury selection room.

Jurors should not feel rejected or insulted if they are excused for cause by the Court or peremptorily challenged by one of the attorneys. The *voir dire* process and challenging of jurors is simply our judicial system's way of guaranteeing both parties to a lawsuit a fair trial.

Q. Am I guaranteed to serve on a jury?

A. Not all jurors who are summoned actually hear a case. Sometimes all the Judges are still working on trials from the previous day, and no new jurors are chosen. Normally, however, some new cases begin every day. Sometimes jurors are challenged and not selected.

A somewhat more demanding task (difficulty value of 423) involves the magazine article on Ida Chen reproduced earlier. This more challenging task requires the reader to explain the phrase "recently won mandate" used at the end of the text. To explain this phrase, the reader needs to understand the concept of a political mandate as it applies to Ida Chen and the way she is portrayed in this article.

Document literacy

Another important aspect of being literate in modern society is having the knowledge and skills needed to process information from documents. We often encounter tables, schedules, charts, graphs, maps, and forms in everyday life, both at home and at work. In fact, researchers have found that many of us spend more time reading documents than any other type of material.[2] The ability to locate and use information from documents is therefore essential.

Success in processing documents appears to depend at least in part on the ability to locate information in complex arrays and to use this information in the appropriate ways. Procedural knowledge may be needed to transfer information from one source or document to another, as is necessary in completing applications or order forms.

The document literacy scale contains 81 tasks with difficulty values that range from 69 to 396 on the scale. By examining tasks associated with various proficiency levels, we can identify characteristics that appear to make certain types of document tasks more or less difficult for readers. Questions and directives associated with these tasks are basically of four types: *locating, cycling, integrating*, and *generating*. Locating tasks require the readers to match one or more features of information stated in the question to either identical or synonymous information given in the document. Cycling tasks require the reader to locate and match one or more features, but differ in that they require the reader to engage in a series of feature matches to satisfy conditions given in the question. The integrating tasks typically require the reader to compare and contrast information in adjacent parts of the document. In the generating tasks, readers must produce a written response by processing information found in the document and also making text-based inferences or drawing on their own background knowledge.

[2] J.T. Guthrie, M. Seifert, and I.S. Kirsch. (1986). "Effects of Education, Occupation, and Setting on Reading Practices." *American Educational Research Journal*, 23. pp. 151-60.

As with the prose tasks, each type of question or directive extends over a range of difficulty as a result of interactions among several variables or task characteristics that include:

- the number of categories or features of information in the question that the reader has to process or match
- the number of categories or features of information in the document that can serve to distract the reader or that may seem plausible but are incorrect
- the extent to which the information asked for in the question is obviously related to the information stated in the document and
- the structure of the document

A more detailed discussion of the five levels of document literacy is provided in the following pages.

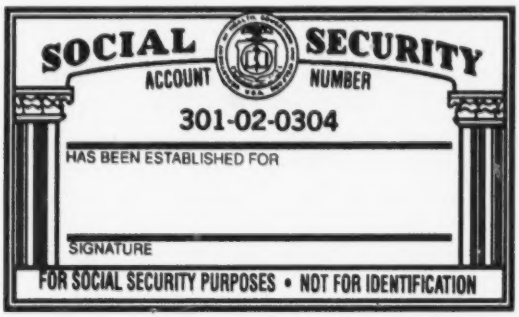
Document Level 1 Scale range: 0 to 225

Tasks in this level tend to require the reader either to locate a piece of information based on a literal match or to enter information from personal knowledge onto a document. Little, if any, distracting information is present.

Percentage of adults in the state performing in this level: 18%
Percentage of adults in the nation performing in this level: 23%

Some of the Level 1 tasks require the reader to match one piece of information in the directive with an identical or synonymous piece of information in the document. For example, readers may be asked to write a piece of personal background information — such as their name or age — in the appropriate place on a document. One task with a difficulty value of 69 directs individuals to look at a Social Security card and sign their name on the line marked "signature." Tasks such as this are quite simple, since only one piece of information is required, it is known to the respondent, and there is only one logical place on the document where it may be entered.

Here is a Social Security card. Sign your name on the line that reads "signature."



Other tasks in this level are slightly more complex. For example, in one task, readers were asked to complete a section of a job application by providing several pieces of information. This was more complicated than the previous task described, since respondents had to conduct a series of one-feature matches. As a result, the difficulty value of this task was higher (218).

You have gone to an employment center for help in finding a job. You know that this center handles many different kinds of jobs. Also, several of your friends who have applied here have found jobs that appeal to you.

The agent has taken your name and address and given you the rest of the form to fill out. Complete the form so the employment center can help you get a job.

Birth date_____ Age____ Sex: Male____ Female____

Height_____ Weight_____ Health_____

Last grade completed in school_____

Kind of work wanted:

Part-time_____ Summer_____

Full-time_____ Year-round_____

Other tasks in this level ask the reader to locate specific elements in a document that contains a variety of information. In one task, for example, respondents were given a form providing details about a meeting and asked to indicate the date and time of the meeting, which were stated in the form. The difficulty values associated with these tasks were 183 and 180, respectively. The necessary information was referred to only once in the document.

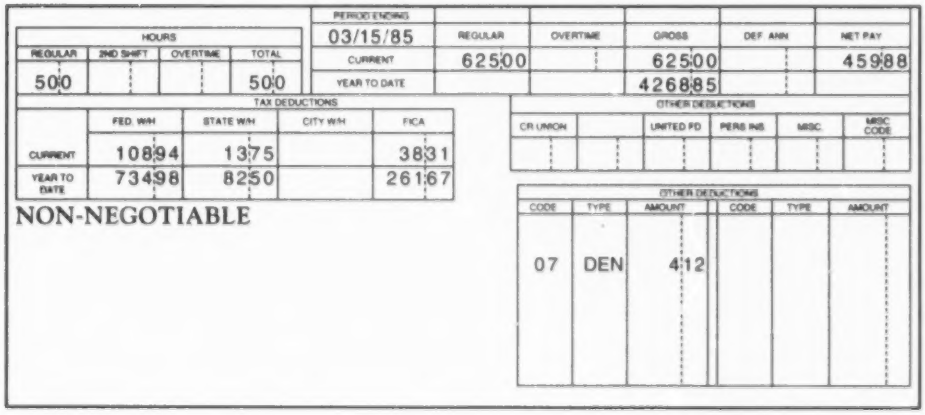
Document Level 2 Scale range 226 to 275

Tasks in this level are more varied than those in Level 1. Some require the reader to match a single piece of information; however, several distractors may be present, or the match may require low-level inferences. Tasks in this level may also ask the reader to cycle through information in a document or to integrate information from various parts of a document.

Percentage of adults in the state performing in this level: 31%
Percentage of adults in the nation performing in this level: 28%

Some tasks in Level 2 ask readers to match two pieces of information in the text. For example, one task with a difficulty value of 261 directs the respondent to look at a pay stub and to write "the gross pay for this year to date." To perform the task successfully, respondents must match both "gross pay" and "year to date" correctly. If readers fail to match on both features, they are likely to indicate an incorrect amount.

What is the gross pay for this year to date?



HOURS				PERIOD ENDING	REGULAR	OVERTIME	GROSS	DEF. ANN	NET PAY
REGULAR	2ND SHIFT	OVERTIME	TOTAL	03/15/85					
500			500	CURRENT	62500		62500		45988
				YEAR TO DATE			426885		

TAX DEDUCTIONS

	FED. W/H	STATE W/H	CITY W/H	FICA
CURRENT	10894	1375		3831
YEAR TO DATE	73498	8250		26167

OTHER DEDUCTIONS

CR UNION		UNITED FD	PERS INS	MISC	MISC CODE

OTHER DEDUCTIONS

CODE	TYPE	AMOUNT	CODE	TYPE	AMOUNT
07	DEN	412			

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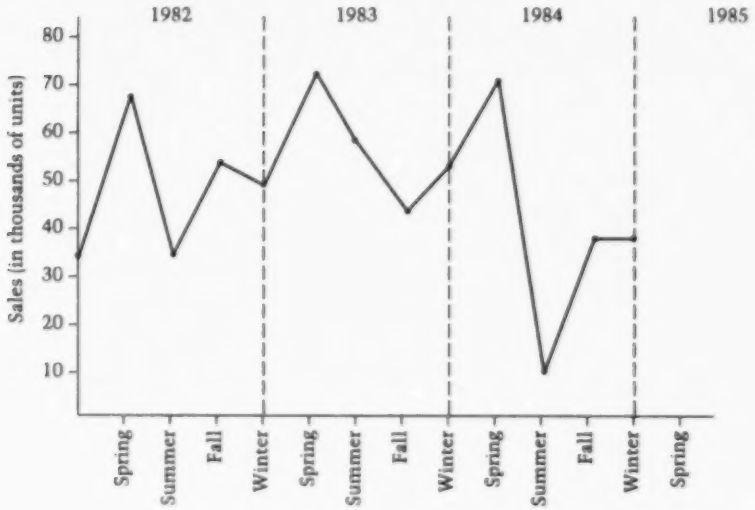
A second question based on this document — What is the current net pay? — was also expected to require readers to make a two-feature match. Accordingly, the difficulty values of the two items were expected to be similar. The task anchored at about the 200 point on the scale, however, and an analysis of the pay stub reveals why its difficulty was lower than that of the previous task. To succeed on the second task, the reader only needs to match on the feature "net pay." Since the term appears only once on the pay stub and there is only one number in the column, this task requires only a one-feature match and receives a difficulty value that lies within the Level 1 range on the document scale.

Tasks in Level 2 may also require the reader to integrate information from different parts of the document by looking for similarities or differences. For example, a task with a difficulty value of 268 asks respondents to study a line graph showing a company's seasonal sales over a three-year period, then predict the level of sales for the following year, based on the seasonal trends shown in the graph.

You are a marketing manager for a small manufacturing firm. This graph shows your company's sales over the last three years. Given the seasonal pattern shown on the graph, predict the sales for Spring 1985 (in thousands) by putting an "x" on the graph.



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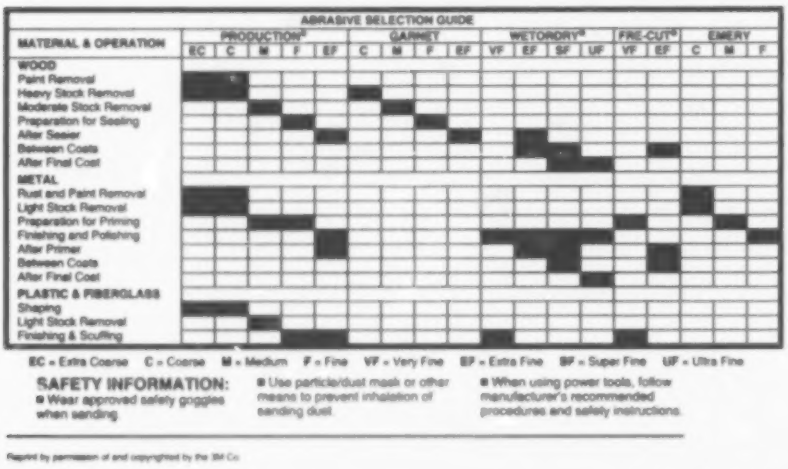
Document Level 3 Scale range: 276 to 325

Some tasks in this level require the reader to integrate multiple pieces of information from one or more documents. Others ask readers to cycle through rather complex tables or graphs which contain information that is irrelevant or inappropriate to the task.

Percentage of adults in the state performing in this level: 32%
Percentage of adults in the nation performing in this level: 31%

Tasks within the range for Level 3 ask the reader to locate particular features in complex displays, such as tables that contain nested information. Typically, distractor information is present in the same row or column as the correct answer. For example, the reader might be asked to use a table that summarizes appropriate uses for a variety of products, and then choose which product to use for a certain project. One such task had a difficulty value of 305. To perform this task successfully, the respondent uses a table containing nested information to determine the type of sandpaper to buy if one needs "to smooth wood in preparation for sealing and plans to buy garnet sandpaper." This task requires matching not only on more than a single feature of information but also on features that are not always superordinate categories in the document. For example, "preparation for sealing" is subordinated or nested under the category "wood," while the type of sandpaper is under the main heading of "garnet." In addition, there are three other types of sandpaper that the reader might select that partially satisfy the directive.

You need to smooth wood in preparation for sealing and plan to buy garnet sandpaper. What type of sandpaper should you buy?



ABRASIVE SELECTION GUIDE

MATERIAL & OPERATION	PRODUCTION®					GARNET				WETORDRY®				FRE-CUT®		EMERY		
	EC	C	M	F	EF	C	M	F	EF	VF	EF	SF	UF	VF	EF	C	M	F
WOOD																		
Paint Removal	■	■				■												
Heavy Stock Removal			■			■	■											
Moderate Stock Removal				■				■										
Preparation for Sealing					■				■		■				■			
After Sealer											■	■						
Between Coats													■					
After Final Coat																		
METAL																		
Rust and Paint Removal	■	■														■		
Light Stock Removal			■	■											■		■	
Preparation for Priming					■					■	■	■						■
Finishing and Polishing													■					
After Primer											■	■			■			
Between Coats													■					
After Final Coat																		
PLASTIC & FIBERGLASS																		
Shaping	■	■																
Light Stock Removal			■															
Finishing & Scuffing				■						■				■				

EC = Extra Coarse C = Coarse M = Medium F = Fine VF = Very Fine EF = Extra Fine SF = Super Fine UF = Ultra Fine

SAFETY INFORMATION:

- Wear approved safety goggles when sanding
- Use particle/dust mask or other means to prevent inhalation of sanding dust
- When using power tools, follow manufacturer's recommended procedures and safety instructions.

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At the same level of difficulty (306), another task directs the reader to a stacked bar graph depicting estimated power consumption by source for four different years. The reader is asked to select an energy source that will provide more power in the year 2000 than it did in 1971. To succeed on this task, the reader must first identify the correct years and then compare each of the five pairs of energy sources given.

Document Level 4 Scale range: 326 to 375

Tasks in this level, like those in the previous levels, ask readers to perform multiple-feature matches, cycle through documents, and integrate information; however, they require a greater degree of inferencing. Many of these tasks require readers to provide numerous responses but do not designate how many responses are needed. Conditional information is also present in the document tasks in this level and must be taken into account by the reader.

Percentage of adults in the state performing in this level: 17%
Percentage of adults in the nation performing in this level: 15%

One task in this level (348) combines many of the variables that contribute to difficulty in Level 4. These include: multiple feature matching, complex displays involving nested information, numerous distractors, and conditional information that must be taken into account in order to arrive at a correct response. Using the bus schedule shown here, readers are asked to select the time of the next bus on a Saturday afternoon, if they miss the 2:35 bus leaving Hancock and Buena Ventura going to Flintridge and Academy. Several departure times are given, from which respondents must choose the correct one.

On Saturday afternoon, if you miss the 2:35 bus leaving Hancock and Buena Ventura going to Flintridge and Academy, how long will you have to wait for the next bus?

ROUTE **5**

VISTA GRANDE

This bus line operates Monday through Saturday providing "local service" to most neighborhoods in the northeast section.
Buses run thirty minutes apart during the morning and afternoon rush hours Monday through Friday.
Buses run one hour apart at all other times of day and Saturday.
No Sunday, holiday or night service.

OUTBOUND
from Terminal

	Leave Downtown Terminal	Leave Hancock and Buena Ventura	Leave Citadel	Leave Rustic Hills	Leave North Carefree and Oro Blanco	Arrive Flintridge and Academy
AM	6:20	6:35	6:45	6:50	7:03	7:15
	6:50	7:05	7:15	7:20	7:33	7:45
	7:20	7:35	7:45	7:50	8:03	8:15
	7:50	8:05	8:15	8:20	8:33	8:45
	8:20	8:35	8:45	8:50	9:03	9:15
	8:50	9:05	9:15	9:20	9:33	9:45
	9:20	9:35	9:45	9:50	10:03	10:15
	10:20	10:35	10:45	10:50	11:03	11:15
	11:20	11:35	11:45	11:50	12:03	12:15
PM	12:20	12:35	12:45	12:50	1:03	1:15
	1:20	1:35	1:45	1:50	2:03	2:15
	2:20	2:35	2:45	2:50	3:03	3:15
	2:50	3:05	3:15	3:20	3:33	3:45
	3:20	3:35	3:45	3:50	4:03	4:15
	3:50	4:05	4:15	4:20	4:33	4:45
	4:20	4:35	4:45	4:50	5:03	5:15
	4:50	5:05	5:15	5:20	5:33	5:45
	5:20	5:35	5:45	5:50	6:03	6:15
	5:50	6:05	6:15	6:20	6:33	6:45
	6:20	6:35	6:45	6:50	7:03	7:15

INBOUND
toward Terminal

Leave Flintridge and Academy	Leave North Carefree and Oro Blanco	Leave Rustic Hills	Leave Citadel	Leave Hancock and Buena Ventura	Arrive Downtown Terminal	
6:15	6:27	6:42	6:47	6:57	7:15	
6:45	6:57	7:12	7:17	7:27	7:45	Monday through Friday only
7:15	7:27	7:42	7:47	7:57	8:15	
7:45	7:57	8:12	8:17	8:27	8:45	Monday through Friday only
8:15	8:27	8:42	8:47	8:57	9:15	
8:45	8:57	9:12	9:17	9:27	9:45	Monday through Friday only
9:15	9:27	9:42	9:47	9:57	10:15	
9:45	9:57	10:12	10:17	10:27	10:45	Monday through Friday only
10:15	10:27	10:42	10:47	10:57	11:15	
11:15	11:27	11:42	11:47	11:57	12:15	
12:15	12:27	12:42 p.m.	12:47 p.m.	12:57 p.m.	1:15 p.m.	
1:15	1:27	1:42	1:47	1:57	2:15	
2:15	2:27	2:42	2:47	2:57	3:15	
3:15	3:27	3:42	3:47	3:57	4:15	
3:45	3:57	4:12	4:17	4:27	4:45	Monday through Friday only
4:15	4:27	4:42	4:47	4:57	5:15	
4:45	4:57	5:12	5:17	5:27	5:45	Monday through Friday only
5:15	5:27	5:42	5:47	5:57	6:15	
5:45	5:57	6:12	6:17	6:27	6:45	Monday through Friday only
						Monday through Friday only

You can transfer from this bus to another headed anywhere else in the city bus system

To be sure of a smooth transfer tell the driver of the bus the name of the second bus you need.

Other tasks involving this bus schedule are found in Level 3. These tasks require the reader to match on fewer features of information and do not involve the use of conditional information.

Document Level 5 Scale range: 376 to 500

Tasks in this level require the reader to search through complex displays that contain multiple distractors, to make high-level text-based inferences, and to use specialized knowledge.

Percentage of adults in the state performing in this level: 2%
Percentage of adults in the nation performing in this level: 3%

A task receiving a difficulty value of 396 involves reading and understanding a table depicting the results from a survey of parents and teachers evaluating parental involvement in their school. Respondents were asked to write a brief paragraph summarizing the results. This particular task requires readers to integrate the information in the table to compare and contrast the viewpoints of parents and teachers on a selected number of school issues.

Using the information in the table, write a brief paragraph summarizing the extent to which parents and teachers agreed or disagreed on the statements about issues pertaining to parental involvement at their school.

Parents and Teachers Evaluate Parental Involvement at Their School

Do you agree or disagree that . . . ?

	Total	Level of School		
		Elementary	Junior High	High School
	percent agreeing			
Our school does a good job of encouraging parental involvement in sports, arts, and other nonsubject areas				
Parents	77	76	74	79
Teachers	77	73	77	85
Our school does a good job of encouraging parental involvement in educational areas				
Parents	73	82	71	64
Teachers	80	84	78	70
Our school only contacts parents when there is a problem with their child				
Parents	55	46	62	63
Teachers	23	18	22	33
Our school does not give parents the opportunity for any meaningful roles				
Parents	22	18	22	28
Teachers	8	8	12	7

Source: The Metropolitan Life Survey of the American Teacher, 1987

Quantitative literacy

Since adults are often required to perform numerical operations in everyday life, the ability to perform quantitative tasks is another important aspect of literacy. These abilities may seem, at first glance, to be fundamentally different from the types of skills involved in reading prose and documents and, therefore, to extend the concept of literacy beyond its traditional limits. However, research indicates that the processing of printed information plays a critical role in affecting the difficulty of tasks along this scale.[3]

[3] I.S. Kirsch and A. Jungeblut. (1986). *Literacy: Profiles of America's Young Adults, Final Report*. Princeton, NJ: Educational Testing Service. I.S. Kirsch, A. Jungeblut, and A. Campbell. (1992). *Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*. Princeton, NJ: Educational Testing Service.

The quantitative literacy scale contains some 39 tasks with difficulty values that range from 191 to 436. The difficulty of these tasks appears to be a function of several factors, including:

- the particular arithmetic operation called for
- the number of operations needed to perform the task
- the extent to which the numbers are embedded in printed materials and
- the extent to which an inference must be made to identify the type of operation to be performed

In general, it appears that many individuals can perform simple arithmetic operations when both the numbers and operations are made explicit. However, when the numbers to be used must be located in and extracted from different types of documents that contain similar but irrelevant information, or when the operations to be used must be inferred from printed directions, the tasks become increasingly difficult.

A detailed discussion of the five levels of quantitative literacy is provided on the following pages.

Quantitative Level 1 Scale range: 0 to 225

Tasks in this level require readers to perform single, relatively simple arithmetic operations, such as addition. The numbers to be used are provided and the arithmetic operation to be performed is specified.

Percentage of adults in the state performing in this level: 17%
Percentage of adults in the nation performing in this level: 22%

The least demanding task on the quantitative scale (191) requires the reader to total two numbers on a bank deposit slip. In this task, both the numbers and the arithmetic operation are judged to be easily identified and the operation involves the simple addition of two decimal numbers that are set up in column format.

You wish to use the automatic teller machine at your bank to make a deposit. Figure the total amount of the two checks being deposited. Enter the amount on the form in the space next to TOTAL.

Availability of Deposits

Funds from deposits may not be available for immediate withdrawal. Please refer to your institution's rules governing funds availability for details.

Crediting of deposits and payments is subject to verification and collection of actual amounts deposited or paid in accordance with the rules and regulations of your financial institution.

PLEASE PRINT

YOUR MAC CARD NUMBER (No PINs PLEASE)
111 222 3334

YOUR FINANCIAL INSTITUTION
Union Bank

YOUR ACCOUNT NUMBER
987 555 674

YOUR NAME
Chris Jones

CHECK ONE ☐ DEPOSIT or ☐ PAYMENT

CASH	$	00
LIST CHECKS BY BANK NO.	ENDORSE WITH NAME & ACCOUNT NUMBER	
	557	19
	75	00
TOTAL		

DO NOT DETACH TICKET

DO NOT FOLD NO COINS OR PAPER CLIPS PLEASE

Quantitative Level 2 Scale range: 226 to 275

Tasks in this level typically require readers to perform a single operation using numbers that are either stated in the task or easily located in the material. The operation to be performed may be stated in the question or easily determined from the format of the material (for example, an order form).

Percentage of adults in the state performing in this level: 27%
Percentage of adults in the nation performing in this level: 25%

In the easier tasks in Level 2, the quantities are also easy to locate. In one such task at 250 on the quantitative scale, the cost of a ticket and bus is given for each of two shows. The reader is directed to determine how much less attending one show will cost in comparison to the other.

The price of one ticket and bus for "Sleuth" costs how much less than the price of one ticket and bus for "On the Town"?

THEATER TRIP

A charter bus will leave from the bus stop (near the Conference Center) at 4 p.m., giving you plenty of time for dinner in New York. Return trip will start from West 45th Street directly following the plays. Both theaters are on West 45th Street. Allow about 1½ hours for the return trip.

Time:	4 p.m., Saturday, November 20		
Price:	"On the Town"	Ticket and bus	$11.00
	"Sleuth"	Ticket and bus	$8.50
Limit:	Two tickets per person		

In a more complex set of tasks, the reader is directed to complete an order form for office supplies using a page from a catalogue. No other specific instructions as to what parts of the form should be completed are given in the directive. One task (difficulty value of 270) requires the reader to use a table on the form to locate the appropriate shipping charges based on the amount of a specified set of office supplies, to enter the correct amount on an order form, and then to calculate the total price of the supplies.

Quantitative Level 3 Scale range: 276 to 325

In tasks in this level, two or more numbers are typically needed to solve the problem, and these must be found in the material. The operation(s) needed can be determined from the arithmetic relation terms used in the question or directive.

Percentage of adults in the state performing in this level: 33%
Percentage of adults in the nation performing in this level: 31%

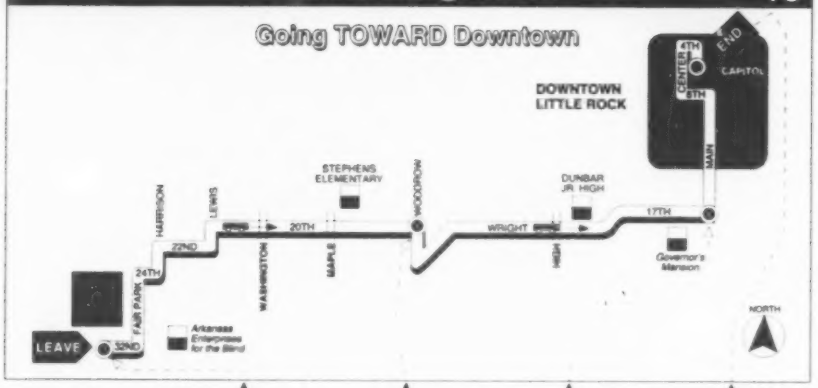
In general, tasks within the range for Level 3 ask the reader to perform a single operation of addition, subtraction, multiplication, or division. However, the operation is not stated explicitly in the directive or made clear by the format of the document. Instead, it must be inferred from the terms used in the directive. These tasks are also more difficult because the reader must locate the numbers in various parts of the document in order to perform the operation.

From a bar graph showing percentages of population growth for two groups across six periods, a task at the 278 point on the scale directs the reader to calculate the difference between the groups for one of the years.

A more difficult task in Level 3 (321) requires the use of a bus schedule to determine how long it takes to travel from one location to another on a Saturday. To respond correctly, the reader must match on several features of information given in the question to locate the appropriate times.

Suppose that you took the 12:45 p.m. bus from U.A.L.R. Student Union to 17th and Main on a Saturday. According to the schedule, how many minutes is the bus ride?

16 South Highland 16



4	5	6	7
BUS LEAVES from U.A.L.R. Student Union	**Bus arrives** at 20th & Woodrow	**Bus arrives** at 17th & Main	**BUS ENDS** at Capitol & Louisiana

		WEEKDAYS			
A.M.	♿	5:38	5:51	6:00	6:09
		6:11	6:25	6:35	6:45
	♿	6:41	6:55	7:05	7:15
		7:11	7:25	7:35	7:45
	♿	7:41	7:55	8:05	8:15
		8:11	8:25	8:35	8:45
	♿	8:41	8:55	9:05	9:15
		9:14	9:27	9:36	9:45
	♿	9:44	9:57	10:06	10:15
		10:14	10:27	10:36	10:45
	♿	10:44	10:57	11:06	11:15
		11:14	11:27	11:36	11:45
	♿	11:44	11:57	12:06	12:15
P.M.		12:14	12:27	12:36	12:45
	♿	12:44	12:57	1:06	1:15
		1:14	1:27	1:36	1:45
	♿	1:44	1:57	2:06	2:15
		2:14	2:27	2:36	2:45
	♿	2:44	2:57	3:06	3:15
		3:14	3:27	3:36	3:45
	♿	3:43	3:56	4:05	4:15
		4:13	4:26	4:35	4:45
	♿	4:43	4:56	5:05	5:15
		5:13	5:26	5:35	5:45
	♿	5:45	5:58	6:07	6:17
		6:11	6:22	6:30	–
	♿	6:46	6:57	7:05	–

		SATURDAY			
A.M.	♿	5:38	5:51	6:00	6:09
	♿	6:45	6:57	7:06	7:15
	♿	7:45	7:57	8:06	8:15
	♿	8:45	8:57	9:06	9:15
	♿	9:45	9:57	10:06	10:15
	♿	10:45	10:57	11:06	11:15
	♿	11:45	11:57	12:06	12:15
P.M.	♿	12:45	12:57	1:06	1:15
	♿	1:45	1:57	2:06	2:15
	♿	2:45	2:57	3:06	3:15
	♿	3:45	3:57	4:06	4:15
	♿	4:45	4:57	5:06	5:15
	♿	5:45	5:57	6:06	6:15
	♿	6:44	6:56	7:05	–

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Quantitative Level 4 Scale range: 326 to 375

These tasks tend to require readers to perform two or more sequential operations or a single operation in which the quantities are found in different types of displays, or the operations must be inferred from semantic information given or drawn from prior knowledge.

Percentage of adults in the state performing in this level: 19%
Percentage of adults in the nation performing in this level: 17%

One task in this level, with a difficulty value of 332, asks the reader to estimate, based on information in a news article, how many miles per day a driver covered in a sled-dog race. The respondent must know that to calculate a "per day" rate requires the use of division.

A more difficult task (355) requires the reader to select from two unit price labels to estimate the cost per ounce of creamy peanut butter. To perform this task successfully, readers may have to draw some information from prior knowledge.

Estimate the cost per ounce of the creamy peanut butter. Write your estimate on the line provided.

Unit price	You pay
11.8¢ per oz.	1.89
rich chnky pnt bt	
10693	16 oz.

Unit price	You pay
1.59 per lb.	1.99
creamy pnt butter	
10732	20 oz.

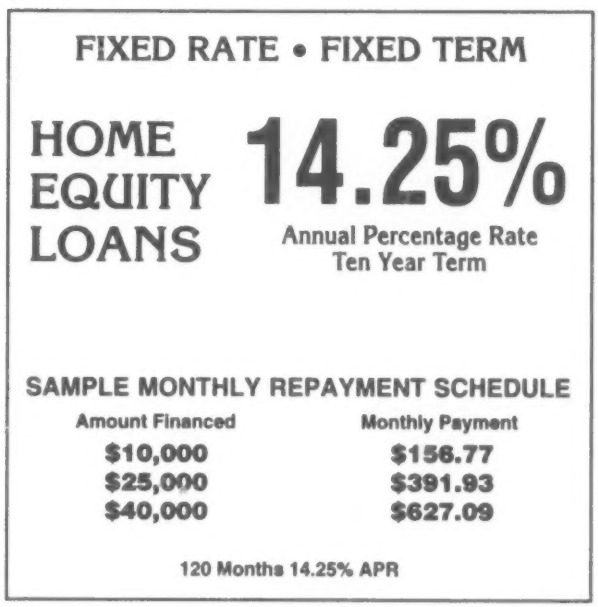
Quantitative Level 5 Scale range: 376 to 500

These tasks require readers to perform multiple operations sequentially. They must disembed the features of the problem from text or rely on background knowledge to determine the quantities or operations needed.

Percentage of adults in the state performing in this level: 4%
Percentage of adults in the nation performing in this level: 4%

One of the most difficult tasks on the quantitative scale (433) requires readers to look at an advertisement for a home equity loan and then, using the information given, explain how they would calculate the total amount of interest charges associated with the loan.

You need to borrow $10,000. Find the ad for Home Equity Loans on page 2 in the newspaper provided. Explain to the interviewer how you would compute the total amount of interest charges you would pay under this loan plan. Please tell the interviewer when you are ready to begin.



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Estimating Performance Across the Literacy Levels

The literacy levels not only provide a way to explore the progression of information-processing demands across the scales; they can also be used to explore the likelihood that individuals in each level will succeed on tasks of varying difficulty.

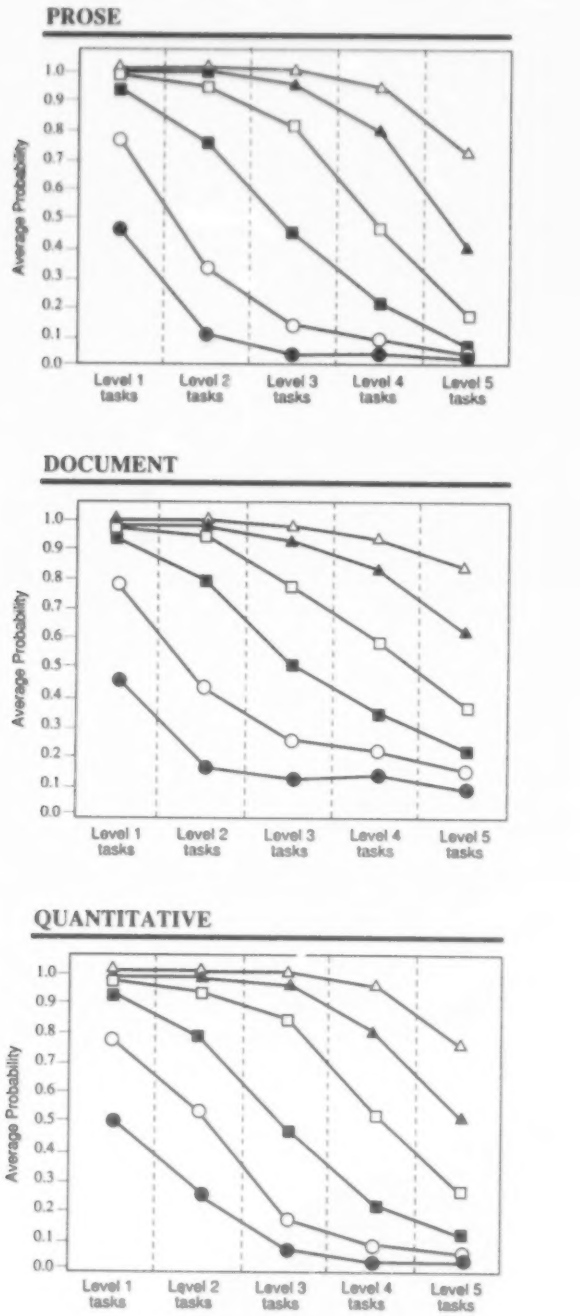
The following graphs (Figure 5.2) display the probability that individuals performing at selected points on each scale will give a correct response to tasks with varying difficulty values. We see, for example, that a person whose prose proficiency is 150 has less than a 50 percent chance of giving a correct response to the Level 1 tasks. Individuals whose proficiency scores were at the 200 point, on the other hand, have an almost 80 percent probability of responding correctly to these tasks.

In terms of task demands, we can infer that adults performing at the 200 point on the prose scale are likely to be able to locate a single piece of information in a brief piece of text where there is no distracting information, or when any distracting information is located apart from the desired information. They are likely to have far more difficulty with the types of tasks that occur in Levels 2 through 5, however. For example, they would have only about a 30 percent chance of performing the average task in Level 2 correctly and only about a 10 percent chance of success, or less, on the more challenging tasks found in Levels 3, 4, and 5.

In contrast, readers at the 300 point on the prose scale have an 80 percent (or higher) likelihood of success on tasks in Levels 1, 2, and 3. This means that they demonstrate skill identifying information in fairly dense text without organizational aids. They can also integrate, compare, and contrast information that is easily identified in the text. On the other hand, they are likely to have difficulty with tasks that require them to make higher level inferences, to take conditional information into account, and to use specialized knowledge. The probabilities of their performing these Level 4 tasks successfully are just under 50 percent, and on the Level 5 tasks their likelihood of responding correctly falls to under 20 percent.

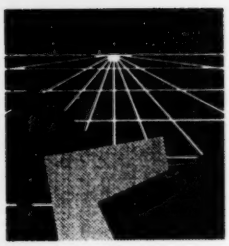
Figure 5.2

Average Probabilities of Successful Performance by Individuals with Selected Proficiency Scores on the Tasks in Each Literacy Level

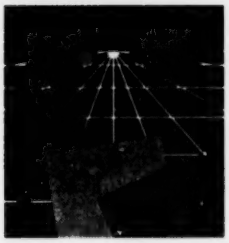


Source: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992.

Similar interpretations can be made using the performance results on the document and quantitative scales. For example, an individual with a proficiency of 150 on the quantitative scale is estimated to have only a 50 percent chance of responding correctly to tasks in Level 1 and less than a 30 percent chance of responding to tasks in each of the other levels. Such an individual demonstrates little or no proficiency in performing the range of quantitative tasks found in this assessment. In contrast, someone with a proficiency of 300 meets or exceeds the 80 percent criterion for the average tasks in Levels 1, 2, and 3. They can be expected to encounter more difficulty with tasks in Levels 4 and 5.



APPENDICES



APPENDIX A

Variable Definitions
[in order of presentation]

State

The state sample includes state residents age 16 to 64 who participated in the State Adult Literacy Survey as well as state residents age 16 and older who participated in the National Adult Literacy Survey. The two samples are combined to increase the numbers of adults in various population groups and thus provide more robust estimates of literacy proficiencies.

Region

Census definitions of regions are used in the National and State Adult Literacy Surveys. The four regions analyzed are the Northeast, Midwest, South, and West. The states in each region are identified below.

Northeast: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania

Midwest: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

South: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas

West: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, Hawaii

The regional samples encompass adults who participated in the state and national surveys, including individuals living in households and those in prison.

Nation

The national sample includes adults age 16 and older who participated in the national household survey, the state surveys, and the survey of prisoners.

Age

All survey respondents were asked to report their birthdates, and this information was used to calculate their ages. Typically, the age groups reported

are: 16 to 18, 19 to 24, 25 to 39, 40 to 54, 55 to 64, and 65 and older. For some analyses, the ages are grouped differently. Because adults age 65 and older were not included in the State Adult Literacy Survey, the state results for adults in the 65 and older age group are based only on those state residents who participated in the national survey. These results may not be representative and should therefore be interpreted with caution.

Country of Birth

All survey respondents were asked to indicate whether they were born in the United States (50 states or Washington, D.C.), a U.S. territory, or another country. Based on their responses, they were divided into two groups: adults born in this country or a United States territory, and those born in another country.

Years Lived in the United States

Survey respondents who were born in a U.S. territory or in another country were asked how many years they had lived in the United States: 1 to 5, 6 to 10, 11 to 15, 16 to 20, 21 to 30, 31 to 40, 41 to 50, 51 or more. They were divided into three groups: adults who had lived in the United States for 1 to 5 years, for 6 to 10 years, and for more than 10 years.

Race/Ethnicity

All survey respondents were asked two questions about their race and ethnicity. One question asked them to indicate which of the following best describes them. The interviewer recorded the races of respondents who refused to answer the question.

White
Black (African American)
American Indian
Alaskan Native
Pacific Islander
Asian
Other

The other question asked respondents to indicate whether they were of Spanish or Hispanic origin or descent. Those who responded "yes" were asked to identify which of the following groups best describes their Hispanic origin:

Mexicano, Mexican, Mexican American, Chicano
Puerto Rican
Cuban
Central/South American
Other Spanish/Hispanic

Adults of Pacific Islander origin were grouped with those of Asian origin, and Alaskan Natives, American Indians, and Other adults are grouped together, due to the small sample sizes. All other racial/ethnic groups are reported separately.

In some analyses, however, the Latino subpopulations are combined to provide reliable estimates. The race/ethnicity categories are mutually exclusive.

Number of Years Lived in Ohio

Survey respondents in Ohio were asked to indicate how many years they had lived in Ohio: less than one year, 1 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, or more than 20 years.

Primary Reason for Moving to Ohio

Survey respondents in Ohio who had moved into the state within the last five years were asked to indicate which of the following was the primary reason why they had moved there: to accompany family or another person, to find a new job, to accept a new job or transfer, to go to school, some other reason, or did not move into Ohio within the last five years.

Type of Physical, Mental, or Other Health Condition

All survey respondents were asked to identify whether they have a physical, mental, or other health condition that keeps them from participating fully in work, school, housework, or other activities.

Sex

The interviewers recorded the sex of each respondent.

Level of Education Attained in the United States

All survey respondents were asked to indicate the highest level of education they completed in this country. The following options were given:

Still in high school
Less than high school
Some high school
GED or high school equivalency
High school graduate
Vocational, trade, or business school after high school
College: less than 2 years
College: associate's degree (A.A.)
College: 2 or more years, no degree
College graduate (B.S. or B.A.)
Postgraduate, no degree
Postgraduate degree (M.S., M.A., Ph.D., M.D., etc.)

For certain analyses, some of these groups were collapsed. For example, respondents who had completed postgraduate studies but no degree were generally combined with those who had completed a postgraduate degree.

Average Years of Schooling

Responses to the question on the highest level of education attained in the United States were used to calculate the average number of years of schooling attained. Individuals who were still in high school at the time of the survey were left out of this analysis. Adults who had not graduated from high school were asked to indicate exactly how many years of schooling they had completed (0 through 12). Individuals who did not provide this information were assigned a value equal to the average number of years of schooling completed by those who did provide the information. For adults in the category "0 to 8 years of education," the average number of years of schooling was 6.10, and for adults in the category "9 to 12 years of education," the average was 10.11. The remaining adults were assigned values representing the number of years of schooling completed, as follows:

GED, high school equivalency	12
High school graduate	12
Vocational, trade, or business school after high school	13
College: less than 2 years	13
College: associate's degree (A.A.)	14
College: 2 or more years, no degree	14.5
College graduate (B.S. or B.A.)	16
Postgraduate, no degree	17
Postgraduate degree	18

Using these values, the average number of years of schooling was calculated for various reporting groups (such as age, race/ethnicity, and sex).

Parents' Level of Education

All survey respondents were asked to indicate the highest level of education completed by their mother (or stepmother or female guardian) and by their father (or stepfather or male guardian). The response options provided were identical to those provided in the question about respondents' own level of education. A new variable was then constructed, reflecting the highest level of education attained by either parent.

Highest Level of Education Completed Before Coming to the United States

Survey respondents who were born in a United States territory or in another country were asked to indicate the highest level of education they had completed before coming to the United States.

Main Reason for Stopping Schooling

Survey respondents who did not graduate from high school or receive a GED or high school equivalency (and who were not still in high school) were asked

to indicate which of the following was the main reason why they had stopped their public or private schooling when they did: financial problems, went to work or into the military, pregnancy, lost interest or had behavior problems in school, academic problems at school, family or personal problems, or other.

Participation in a GED or High School Equivalency Program

Survey respondents who did not graduate from high school (and were not still in high school) were asked if they had ever studied for a GED or high school equivalency. Combined with their responses to the question about the highest level of education they had completed in the United States, their responses were used to create two new variables: one reflecting whether or not they had ever studied for a GED, and another indicating whether program participants had actually earned their diplomas.

Place Where GED Was Received

Survey respondents in Ohio were asked to indicate where they had received their GED: in Ohio, outside Ohio, or did not receive a GED.

Current Educational Enrollment and Goals

Household survey respondents except those still in high school were asked whether they were currently enrolled in school or college either full time or part time. Those who were enrolled were asked what diploma, certificate, degree, or accreditation they expected to earn: a high school diploma or equivalency; vocational, trade, or business; two years of college (associate's degree); four- or five-year college degree (B.S., B.A.); Master's, Ph.D., M.D., or other advanced degree; other; or none.

Levels of Education Completed in Ohio

Survey respondents in Ohio were asked which levels of schooling they had attended in Ohio. They were given the following list of options and asked to code all that applied to them: Kindergarten through grade 3, grades 4 through 8, grades 9 through 12, vocational school or community college (one- or two-year program), four-year college or university, or did not attend school in Ohio. Responses were used to construct two new variables: one indicating whether respondents had completed any schooling in the state, and another indicating the highest level of education completed in the state.

Place Where High School Diploma Received

Survey respondents in Ohio were asked to indicate where they had received their high school diploma: a public school in Ohio, a public school outside Ohio, a private school in Ohio, a private school outside Ohio, or did not receive a high school diploma.

Enrollment in a Basic Skills Program

All survey respondents were asked whether they were currently enrolled in or had ever taken part in a program other than regular school in order to improve their basic skills — that is, basic reading, writing, and arithmetic skills.

Labor Force Status

Household survey respondents were asked what they were doing the week before the survey:

1) working at a full-time job for pay or profit (35 hours or more)
2) working two or more part-time jobs for pay, totaling 35 or more hours
3) working for pay or profit part time (1 to 35 hours)
4) unemployed, laid off, or looking for work
5) with a job but not at work
6) with a job but on family leave (maternity or paternity leave)
7) in school
8) keeping house
9) retired
10) doing volunteer work

They were then divided into four groups: adults working full time (or working two or more part-time jobs); those working part time; those unemployed, laid off, or looking for work; and those out of the labor force. Adults in categories 1 and 2 above were counted as being employed full time; those in category 3 were counted as being employed part time; those in category 4 were counted as unemployed; those in categories 5 and 6 were counted as being not at work (and therefore omitted from the analyses); and those in categories 7 through 10 were counted as being out of the labor force.

Occupational Category

All survey respondents were asked two questions about their current or most recent jobs, whether full time or part time. The first question asked them to identify the type of business or industry in which they worked — for example, television manufacturing, retail shoe store, or farm. The second question asked them to indicate their occupation, or the name of their job — for example, electrical engineer, stock clerk, typist, or farmer. Their responses were used to create four occupational categories: professional, management, or technical; sales or clerical; craft or service; and labor, assembly, fishing, or farming.

Average Number of Weeks Worked

Household survey respondents (including those unemployed or out of the labor force the week before the survey) were asked to indicate how many weeks they had worked for pay or profit during the past 12 months, including paid leave (such as vacation and sick leave).

Median Weekly Wages

Household survey respondents who were employed or on leave the week before the survey were asked to report their average wages or salaries (including tips and commissions) before deductions. They reported their wages or salaries per hour, day, week, two-week period, month, year, or other unit of time, and these data were used to calculate their weekly wages. The median, rather than the arithmetic mean, is used in these analyses due to the wide variability in wages among adults at the lowest and highest literacy levels.

Median Annual Household Income

Household survey respondents were asked to indicate their family's total income from all sources in 1991. They were instructed to consider as family anyone who lives in the household and is related by blood, marriage, or adoption.

Sources of Nonwage Income and Support

Household survey respondents were asked to indicate which of the following types of income and support they or anyone in their family received during the past 12 months: Social Security, Supplemental Security Income, retirement payments, Aid to Families with Dependent Children, food stamps, interest from savings or other bank accounts, dividend income, and income from other sources. Each source was treated as a separate variable, and respondents were divided into two groups: those who had received this type of income or support, and those who had not. This report analyzes results for adults who reported receiving food stamps, Aid to Families with Dependent Children (or public assistance), and interest from savings.

Poverty Status

Household survey respondents were asked to report the number of persons living in their households as well as the family's total income from all sources during the previous calendar year. Their responses to these two questions were used to construct the poverty status variable. Based on the 1991 poverty income thresholds of the federal government, the following criteria were used to identify respondents who were poor or near poor:

Respondents whose family size was:	And whose annual household income was at or below:
1	$ 8,665
2	$11,081
3	$13,575
4	$17,405
5	$20,570
6	$23,234
7	$26,322
8	$29,506
9	$34,927

Voting

Household survey respondents were asked whether or not they had voted in a national or state election in the past five years. Some participants reported being ineligible to vote, and they were excluded from the analyses. The results reported herein reflect the percentages of adults who voted, of those who were eligible to vote.

Language Learned Before Starting School

All survey respondents were asked what language or languages they had learned to speak before they started school: English, Spanish, or Other. Their responses were used to divide respondents into three groups: those who spoke English only, those who spoke English and Spanish or another language, and those who spoke Spanish or another language only.

Language Usually Spoken Now

Survey respondents who had learned to speak a language other than English before starting school (instead of or in addition to English) were asked what language they usually speak now: English, Spanish, or Other.

Use of English or Another Language in Various Contexts

Survey respondents who had learned to speak a language other than English before starting school (either instead of or in addition to English) were asked what language they use in the following situations: at home, at work, while shopping in their neighborhoods, and when visiting relatives or friends. The options given were: always English, more English than another language, English and another language equally, more another language than English, or always another language. These were collapsed into the following categories: always English, sometimes a non-English language, and always a non-English language.

Self-reported English Literacy

All survey respondents were asked four questions about their English literacy skills, concerning how well they speak, understand, read, and write English. Four response options were given: very well, well, not well, and not at all. These were combined into two categories: "very well or well" and "not well or not at all."

Reliance on Various Sources of Information

Household survey respondents were asked how much information about current events, public affairs, and the government they usually get from newspapers, magazines, radio, television, and family members, friends, or coworkers. The responses to these questions were used to construct a new variable that reflects the extent to which adults get information from different sources:

Print media: Adults who get "some" or "a lot" of information from either newspapers or magazines, and those who do not

Nonprint media: Adults who get "some" or "a lot" of information from either television or radio, and those who do not

Personal sources: Adults who get "some" or "a lot" of information from family, friends, or coworkers, and those who do not

Frequency of Newspaper Reading

All survey respondents were asked how often they read a newspaper in English: every day, a few times a week, once a week, less than once a week, or never.

Aspects of Newspaper Reading

All survey respondents were given a list of different parts of the newspaper and asked to identify which parts they generally read. A long list of parts was given, and these were grouped as follows:

news, editorial pages, financial news and stock listings
home, fashion, and health sections, and book, movie, or art reviews
classified ads, other ads, and TV, movie, or concert listings
comics, horoscopes or advice columns
sports

The responses to this question and the prior question on the frequency of newspaper reading were then combined to determine the percentage of newspaper readers (that is, of adults who read the newspaper at least once a week) who read various parts.

Magazine Reading Practices

All survey respondents were asked how many different magazines they look at or read in English on a regular basis: 0, 1, 2, 3 to 5, or 6 or more.

Book Reading Practices

All survey respondents were asked what types of books they had read in English in the past six months, if any. They were given the following options and instructed to code all that apply:

fiction
recreation or entertainment
current affairs or history
inspiration or religion
science or social science
reference, such as encyclopedias or dictionaries
manuals for cooking, operating, repairing, or building
any other types of books
none

In addition to analyzing the results for each type of book, we created a second variable, which indicated whether respondents had read at least one book (coding any response option except "none") or had not read any books (coding "none").

Frequency of Library Use

Household survey respondents were asked how often they use the services of a library, for any reason: daily, weekly, monthly, once or twice a year, or never.

Amount of Television Watched

Household survey respondents were asked how many hours they watch television each day: none, 1 hour or less, 2 hours, 3 hours, 4 hours, 5 hours, or 6 hours or more.

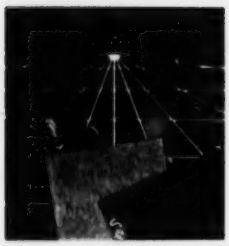
Personal and Job-related Use of Prose Materials and Documents

Household survey respondents were given a list of prose materials (letters or memos; reports, articles, magazines, or journals) and documents (manuals or reference books, including catalogs or parts lists; directions or instructions for medicines, recipes, or other products; diagrams or schematics; bills, invoices, spreadsheets, or budget tables) and asked how often they used each type for personal reading, job-related reading, personal writing, and job-related writing: every day, a few times a week, once a week, less than once a week, and never. These questions were used to construct four new variables:

personal or job-related reading of prose materials
personal or job-related writing of prose materials
personal or job-related reading of documents
personal or job-related writing of documents

Personal Use of Mathematics

Household survey respondents were asked how often they use arithmetic or mathematics (that is, add, subtract, multiply, divide, or measure) for their own use: every day, a few times a week, once a week, less than once a week, or never.



APPENDIX B

Technical Notes

This appendix provides information about the methods and procedures used in the State and National Adult Literacy Surveys. The forthcoming technical report will provide more extensive information.

Sampling

Sampling activities for the State and National Adult Literacy Surveys were conducted by Westat, Inc., under a subcontract with Educational Testing Service.

The sampling for these surveys included three components: a national household sample; 11 individual state household samples; and a national prison sample. The national and state household components were based on a four-stage stratified area sample. The first stage involved the selection of primary sampling units, consisting of counties or groups of counties; the second stage involved the selection of segments consisting of Census blocks or groups of blocks; the third stage involved the selection of households; and the fourth stage involved the selection of age-eligible individuals.

In all, 12 area samples were drawn: one national area sample for the national component, and 11 independent, state-specific area samples for the 11 states that participated in the state component (California, Illinois, Indiana, Iowa, Louisiana, New Jersey, New York, Ohio, Pennsylvania, Texas, Washington). The sample designs used for all 12 samples were similar, except for two principal differences. In the national sample, African American and Latino respondents were sampled at a higher rate than the remainder of the population in order to increase their representation in the sample, whereas the state samples used no oversampling. Also, the target population for the national sample consisted of adults 16 years of age or older, whereas the target population for the state samples consisted of adults 16 to 64 years of age.

Each of the four stages of the sampling process addressed a finer level of geographic detail than the preceding stage. In the first stage, primary sampling units (counties or groups of counties) were selected. These were stratified on the basis of region, metropolitan status, percent African American, percent Latino, and, whenever possible, per capita income. In the national household survey, 101 primary sampling units (PSUs) were used. The national frame was also used to construct individual state frames for the state household survey. Eight to twelve PSUs were selected within each state that participated in the state survey. All PSUs were selected with probability proportional to the PSU's 1990 population.

In the second stage of sampling, segments consisting of Census blocks or groups of blocks were sampled within the selected PSUs. The segments were selected with probability proportional to their size, where the measure of size was a function of the number of year-round housing units within the segment. The oversampling of African American and Latino respondents for the national component was carried out at the segment level. Accordingly, segments were classified as high minority (segments with more than 25 percent African American or Latino population) or not high minority. The measure of size for high minority segments was defined as the number of White non-Latino households plus three times the number of African American or Latino households. High minority segments were therefore oversampled at up to three times the rate of comparable, non-high-minority segments. The measure of size for non-minority segments was simply the number of year-round housing units within the segment.

One in seven of the national survey segments was selected at random to be included in a "no incentive" sample. Respondents from the remaining segments in the national survey received a monetary incentive for participation, as did respondents in the state survey.

The third stage of sampling involved the selection of households within the selected segments. Westat interviewers canvassed all selected segments and prepared lists of all housing units within the boundaries of each segment as determined by the 1990 Census block maps. The lists were used to construct the sampling frame for households. Households were selected with equal probability within each segment, except for White non-Latino households in high minority segments in the national component, which were subsampled so that the sampling rates for White non-Latino respondents would be about the same overall.

The fourth stage of sampling involved the selection of one or two adults within each selected household. A list of age-eligible household members (16 and older for the national component, 16 to 64 for the state component)

was constructed for each selected household. One person was selected at random from households with fewer than four eligible members; two persons were selected from households with four or more eligible members. The interviewers were instructed to list the eligible household members in descending order by age, then to select the one or two household member(s) to interview, as specified on computer-generated sampling messages attached to each questionnaire.

Sampling in this State

The following Ohio counties made up the primary sampling units selected for participation in either the State Adult Literacy Survey or the National Adult Literacy Survey.

Ashland County
Butler County
Carroll County
Clark County
Clermont County
Cuyahoga County
Delaware County
Erie County
Fairfield County
Franklin County
Fulton County
Geauga County
Greene County
Hamilton County
Jefferson County
Knox County
Lake County
Licking County
Lucas County
Madison County
Mahoning County
Medina County
Miami County
Montgomery County
Pickaway County
Portage County
Putnam County
Sandusky County
Stark County
Summit County
Trumbull County
Union County
Van Wert County
Warren County
Wood County

The Data Collection Instruments

Three types of data collection instruments were used in the national and state surveys: the household screener (used to enumerate household members and select survey respondents), the background questionnaires (household and prison), and the literacy exercise booklets. These instruments are described below.

Screener

The screener was used to collect the names, relationships, sex, age, and race/ethnicity of all household members at the selected dwelling unit. For the national sample, household members age 16 years and older were eligible for selection. For the state sample, household members 16 to 64 years of age were eligible. The procedures described earlier (see *Sampling*) were used to select eligible participants.

Background Questionnaires

One of the primary goals of this survey is to relate the literacy skills of the nation's adults to a variety of demographic characteristics and explanatory variables. Accordingly, survey respondents were asked to complete background questionnaires designed to gather information on their characteristics and experiences. The background questionnaires required approximately 20 minute to complete. To ensure standardized administration, the questionnaires were read to the respondent by trained interviewers. The background questionnaire could be conducted in English or Spanish only.

As recommended by the Literacy Definition Committee that guided the National Adult Literacy Survey, the development of the background questionnaire was guided by two goals: to ensure the usefulness of the data by addressing issues of concern, and to ensure comparability with the young adult and Department of Labor job-seeker surveys by including some of the same questions. With these goals in mind, the background questionnaire addressed the following areas:

- general and language background
- educational background and experiences
- political and social participation
- labor force participation
- literacy activities and collaboration
- demographic information

In addition to these questions, the household background questionnaire included a small set of questions asked only of respondents in the state samples. Each of the eleven states that participated in the State Adult Literacy Survey developed five state-specific questions of particular interest to state decision makers, and these were printed at the end of the questionnaire. The state-specific questions gathered information on topics such as the following:

- length of residency in the state and primary reason for moving there
- likelihood of moving out of the state in the next five years
- levels of schooling completed in the state
- type of adult education best suited to personal needs
- factors that affect participation in a course or training program
- reasons for being denied a job or promotion
- training needs for enhanced job productivity
- employers' responsibility for providing literacy education
- home support for reading and education

Exercise Booklets

A total of 26 different exercise booklets were prepared for the survey, each with a corresponding interview guide, which the interviewer used to facilitate the respondent's completion of tasks in the booklet. Each booklet consisted of three sections, and every respondent was asked to complete one booklet. This required approximately 45 minutes.

The State and National Adult Literacy Surveys measure literacy along three scales — prose, document, and quantitative — composed of literacy tasks that simulate the types of demands that adults encounter in everyday life. In all, 166 literacy tasks were administered in this survey, including 81 new tasks and 85 tasks that were administered in the previous young adult and job-seeker surveys. The administration of a common pool of tasks in each of the three surveys allows for valid comparisons of results across time for different populations.

The new literacy tasks developed for the survey serve to refine and extend the three existing literacy scales and provide a better balance of tasks across the scales. The framework used to develop these tasks reflects research on the processes and strategies that respondents used to perform the literacy tasks administered in the young adult survey. In creating the new tasks, one goal was to include diverse materials and to frame questions and directives that represent a broad range of skills and processes. Another goal was to reflect the kinds of reading, writing, and computational demands that adults encounter in work, community, and home settings. Because the tasks are meant to simulate real-life literacy activities, they are open-ended — that is, individuals must produce a written or oral response, rather than simply choose the correct response from a list of options.

The new literacy tasks were developed with attention to the following elements:

- the structure of the stimulus material — for example, exposition, narrative, table, graph, map, or advertisement
- the content represented and/or the context from which the stimulus is drawn — for example, work, home, or community
- the nature of what the individual is asked to do with the material — that is, the purpose for using the material — which in turn guides the strategies needed to complete the task successfully

These factors, operating in various combinations, affect the difficulty of a task relative to others administered in the survey.

The printed and written materials selected for the survey reflect a variety of structures and formats. After these materials were selected, accompanying tasks were developed. The tasks were designed to simulate the way in which people use various types of materials and to require different strategies for successful performance.

Survey Design: Balanced-Incomplete-Block Spiraling

No individual could be expected to respond to the entire set of 166 simulation tasks administered as part of the survey. Accordingly, the survey design gave each respondent a subset of the total pool of literacy tasks, while at the same time ensuring that each of the 166 tasks was administered to a nationally representative sample of the adult population. Literacy tasks were assigned to blocks or sections that could be completed in about 15 minutes, and these blocks were then compiled into booklets so that each block appeared in each position (first, middle, and last) and each block was paired with every other block. Thirteen blocks of simulation tasks were assembled into 26 booklets, each of which could be completed in about 45 minutes. During a personal interview, each participant was asked to complete one booklet of literacy tasks and to respond to the background questionnaire, which required approximately 20 minutes.

Training the Data Collection Staff

The field staff who would be responsible for conducting the state and national surveys was recruited and trained in January and February of 1992 by Westat, Inc. In total, this field staff consisted of 24 supervisors, 24 editors, and 421 interviewers. Supervisors and interviewers were trained first, during a seven-day program in Bethesda, Maryland. Supervisors also received additional training in various areas specific to their managerial responsibilities, including the use of Westat's Automated Survey Control System, a computer-based system for managing the data collection effort. Finally, supervisors and editors were trained to perform an item-by-item edit for each data collection instrument completed by the field interviewers.

After the centralized training session in Bethesda, interviewers attended a regional training session in either San Francisco or Dallas. At these sessions, four training groups were formed, each led by a Westat home office field manager. The trainees in each group were then divided into "learning communities," each consisting of approximately 18 interviewers. Each community was led by the field supervisor who would supervise the interviewers during the data collection phase.

The training program was closely modeled after Westat's general approach to training field staff. This approach uses a mix of techniques to present study material and focuses heavily on trainee participation and practice. Verbatim scripts and a detailed agenda were used to ensure comparability in training across the groups.

The majority of training time was devoted to instructions for administering the data collection instruments: the household screener, the background questionnaire, and the interview guide and literacy exercise booklet. Instructional materials on gaining respondent cooperation, keeping records of nonresponse cases, editing completed work, and completing administrative forms were also presented. A bilingual field supervisor trained Spanish-speaking interviewers on the Spanish translations of the screener and background questionnaires.

Interviewers without previous experience attended an additional one-half day of training on general interviewing techniques prior to the project-specific training, Interviewers chosen for the prison survey received an additional day of training on interview procedures unique to that sample.

Administering the Data Collection Instruments

The data collection effort began immediately after training was completed. Field supervisors assigned cases to the interviewers and mailed letters to

sampled households about one week before the interviewers planned to contact them. Interviewers were given a call record folder and screener for each sampled dwelling unit assigned to them. A computer-generated label attached to the front of each folder and screener provided the case identification number, address, and assigned exercise booklet number. Interviewers were also given all other field materials necessary for them to conduct their interviews and meet reporting requirements.

For each household assigned, the interviewer first verified that the address was in the sample and the unit was an occupied dwelling. If the interviewer was unable to complete a screener at an assigned address, she or he documented the reasons in a non-interview report form.

Upon contacting a sampled household that met the basic criteria, the interviewer introduced the study using a statement printed on the front of the screener and indicated that if someone from the household was selected for an interview, the respondent would be paid $20 for participating. The interviewer then conducted the screening interview with any household member 16 years of age or older. If the household members spoke only a language other than Spanish or English, the interviewer could obtain the services of a translator to complete the screener interview. Once the screener was completed and a respondent or respondents were selected, the interviewer administered the background questionnaire and assigned exercise booklet. If the selected respondent was not available at the time the screener was conducted, the interviewer returned to administer the background questionnaire and exercise booklet.

The background questionnaire was completed first and then the interviewer administered the exercise booklet. During the administration of the exercise booklet, the interviewer was required to create the proper setting — that is, ensure sufficient lighting and table space; read instructions specified in the interview guide; provide materials, such as almanac, calculator, or tape recorder, required to perform certain tasks; tactfully move the respondent to the next task when he or she had spent too much time on one task; and record observations about the respondent's ability to complete the exercise booklet and about any problems that may have affected her or his performance.

Response Rates

A sampled individual could refuse to participate in the survey during any of the three phases of the data collection process; that is, during the administration of the screener, the background questionnaire, or the exercise booklet. The response

rates presented below reflect the percentage of those who responded to each survey instrument, of those who had the opportunity to respond (Table B.1).

Table B.1: Response Rates for the National and State Household Samples

Instrument	National	11 States	This State
Screener	88.8	89.4	89.5
Background Questionnaire	81.9	79.9	79.0
Exercise Booklet	95.3	96.5	97.9

Source: Westat, Inc.

Data Collection Quality Control

Several quality control procedures were undertaken to ensure the integrity of the data collected. These included an edit by the interviewer, a complete edit of all documents by a trained editor, validation of 10 percent of each interviewer's completed (or "closed out") work, and observations by home office staff of interviewers conducting interviews and supervisors managing the data collection effort.

During the interviewer training session, interviewers were instructed on procedures for performing an edit of all data collection documents. The purposes of this edit were to catch and correct or explain any errors or omissions in recording, to learn from mistakes so they were not repeated, and to remove stray marks and completely fill in bubbles on the documents that were to be optically scanned.

In addition to this process, a complete edit was performed on all documents by trained editors. An item-by-item review was performed on each document, and each error was fully documented on an edit form. The supervisor reviewed the results of the edit with the interviewer during a weekly telephone conference.

Validation is the quality control procedure used to verify that an interview was conducted, at the correct address, and according to specified procedures, and to ensure that nonresponse statuses (e.g., refusals, vacancies, language problems) were accurately reported by the interviewers. Interviewers knew that their work would be validated but did not know which cases or which data items. A 10 percent subsample of dwelling units was selected and flagged in

the supervisor's log and in the automated survey control system. The supervisors performed validation interviews by telephone if a phone number was available. Otherwise, validation was performed in person by the supervisor or by another interviewer.

Field observations of both supervisors and interviewers were performed by Westat field management staff. One purpose of the interviewer observation was to provide home office staff with an opportunity to observe the effectiveness of the field procedures and monitor respondents' reactions to the survey. Another purpose was to provide feedback to weak interviewers when there was concern about their skills and/or performance. In addition to in-person observations, interviewers were required to tape record one complete interview and assessment. The field supervisor selected the particular case in advance and listened to the tape to "observe" each interviewer.

Finally, nine of the 24 supervisors were visited by field management staff and evaluated on their editing, coding, office organization, ability to maintain up-to-date records on production data, and supervision of interviewers.

Weighting

Weighting procedures were carried out by Westat, Inc. Full sample and replicate weights were calculated for each record to facilitate the calculation of unbiased estimates and their standard errors. The full sample and replicate weights for the household components were calculated as the product of the base weight for a record and a compositing and raking factor. Demographic variables critical to the weighting were recoded and imputed, if necessary, prior to the calculation of base weights. The recoded versions of these variables are not included in the file.

The base weight was calculated as the reciprocal of the final probability of selection for a respondent, which reflected all stages of sampling. The base weight was then multiplied by a compositing factor which combined the national and state component data in an optimal manner, considering the differences in sample design, sample size, and sampling error between the two components. Twelve different compositing factors were used, one for each of the eleven participating states, and a pseudo factor (equal to one) for all national component records from outside the eleven participating states. The product of the base weight and compositing factor for a given record was the composite weight. The records appropriate for a particular state analysis, therefore, include data from respondents age 16 and older, although the inclusion of records for respondents over the age of 64 in state estimates significantly increases the sampling error of these estimates. Comparisons

using data for adults age 65 and older should therefore be interpreted with caution. This caveat does not apply to national estimates, however, as all records for persons over the age of 64 come from the national component.

The composite weights were raked so that several totals calculated with the resulting full sample weights would agree with the 1990 Census totals, adjusted for undercount. Raking, a procedure similar to poststratification, ensures that particular weighted estimates reach known control totals. Raking is used in place of poststratification when the full intersection of control totals is unavailable.

The cells used for the raking were defined to the finest combination of age, education level, race, and ethnicity that the data would allow. Raking adjustment factors were calculated separately for each of the eleven states and then for the remainder of the United States. The above procedures were repeated for sixty strategically constructed subsets of the sample to create a set of replicate weights to be used for variance estimation using the jackknife method. The replication scheme was designed to produce stable estimates of standard errors for national estimates as well as for the eleven individual state estimates.

The full sample and replicate weights for the incarcerated component were calculated as the product of the base weight for a record and a nonresponse and raking factor. The base weight was calculated as the reciprocal of the final probability of selection for a respondent, which reflected both stages of sampling. The base weights were then adjusted for nonresponse to reflect both facility and inmate nonresponse. The resulting nonresponse-adjusted weights were then raked to agree with independent estimates for certain subgroups of the population.

Scoring the Exercise Booklets

As the first shipments of exercise booklets were received at ETS, photocopies were made of actual responses to the tasks. These sample responses were then scored by various staff, including the test developer and scoring supervisor, using either the scoring guides developed for the young adult tasks or guides prepared during the development of the new tasks. As the sample responses were scored, the scoring guides for the new tasks were adjusted to reflect the kinds of answers that the respondents were providing.

The sample papers were then used to train the readers who would score the exercise booklets. The purposes of the training were to familiarize the readers with the scoring guides and to ensure a high level of agreement among them. Each task and its scoring guide were explained, and sample responses

representative of the score points in the guide were discussed. The readers then scored and discussed an additional 10 to 30 responses. After group training had been completed, all the readers scored all the tasks in over a hundred booklets to give them practice in scoring actual booklets, and to provide an opportunity to score more responses on a practice basis. A follow-up session was held to discuss responses that were given different scores by different readers. The entire training process was completed in about four weeks.

Twenty percent of all the exercise booklets were subjected to a reader reliability check, which entailed a scoring by a second reader. To prevent the second reader from being influenced by the first reader's scores, the first reader masked the scores in every fifth booklet he or she scored. These booklets were then passed to a second reader to score. When the second reader had scored every task, the first reader's scores were unmasked. The scoring supervisor reviewed each response that received discrepant scores from the two readers and discussed it with the readers involved.

The statistic used to report inter-reader reliability is the percentage of exact agreement — that is, the percentage of times that the two readers assigned a task precisely the same score. There was a high degree of inter-reader reliability across all the tasks in the survey, ranging from a low of 88.1 percent to a high of 99.9 percent, with an average agreement of 97 percent. For 133 out of the 166 open-ended tasks, the agreement was above 95 percent.

Data Entry

The background questionnaire was designed to be "read" (or processed) by a computerized scanning device. For most of the questions in this instrument, interviewers filled in scannable ovals next to the respondent's answers. Responses to open-ended items in the background questionnaire were translated into codes and the ovals filled in by Westat editors. During the check-in process at ETS, the screener coding was reviewed and documents were batched and sent to the scanning department on a regular basis. Exercise booklet scores were transferred to scannable documents by the readers who scored the items, and these were also batched and sent to the scanning department at regular intervals. The scanned data from the screeners, background questionnaires, and exercise booklets were transmitted to magnetic tape, which was then sent to the ETS computer center. As each of the different instruments were processed, the data were transferred to a database on the main computer for editing.

Editing and Quality Control

The editing procedures undertaken in this survey included an assessment of the internal logic and consistency of the data received. For example, data were examined for nonexistent housing locations or booklets, illogical or inconsistent responses, and multiple responses where single responses were requested. Where indicated, an error listing was generated and sent back to the processing area, where the original document was retrieved and the discrepancies were corrected wherever possible. For example, in the infrequent cases in which field personnel provided more than one response to a single-response background question, specific guidelines were developed to incorporate these responses consistently and accurately. If a conflict in the data could not be resolved, the information was left in the form in which it was received.

The background questionnaires were also checked to make sure that the skip patterns had been followed, and all data errors were resolved. Finally, a random set of booklets was selected to provide an additional check on the accuracy of transferring information from booklets and answer sheets to the database.

Scaling

The results from the National Adult Literacy Survey are reported on three scales established in the 1985 Young Adult Literacy Survey conducted as part of the National Assessment of Educational Progress: prose literacy, document literacy, and quantitative literacy. Using methods grounded in item response theory (IRT), the performance of a sample of examinees can be summarized on a series of scales even when different respondents have been administered different items. Conventional scoring methods are not suited for surveys such as this one. Specifically, statistics such as proportion of correct responses are inappropriate for surveys like the NALS and SALS, in which respondents receive different sets of items. Moreover, item-by-item reporting ignores patterns across items in various population subgroups. Finally, using average percent correct to estimate the proficiency mean of examinees within subgroups does not provide any other information about the distribution of skills among the examinees.

IRT scaling overcomes these limitations of traditional scoring methods. When several items require similar skills, the response patterns should have some uniformity. Such uniformity can be used to characterize both examinees and items in terms of a common scale, even when examinees receive different sets of items. Comparisons of items and examinees can then be made in

reference to a scale, rather than to percent correct. IRT scaling also allows the performance distributions for various groups of examinees to be compared.

Scaling was carried out separately for each of the three domains of literacy (prose, document, and quantitative). The NAEP reading scale, used in the young adult survey, was dropped because of its lack of relevance to the current reading scale. The scaling model used for the national survey is the three parameter logistic (3PL) model from item response theory.[1] It is a mathematical model for estimating the probability that a particular person will respond correctly to a particular item from a single domain of items. This probability is given as a function of a parameter characterizing the proficiency of that person, and three parameters characterizing the properties of that item.

Statistical Procedures

The statistical comparisons in this report were based on the t statistic. Generally, statistical significance is determined by calculating a t value for the difference between a pair of means, or proportions, and comparing this value to published tables of values at certain critical levels, called alpha levels. The alpha level is an a priori statement of the probability of inferring that a difference exists when, in fact, it does not.

The formula used to compute the t statistic was as follows:
$t = (P_1 - P_2)/\sqrt{(se_1^2 + se_2^2)}$, where P_1 and P_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

In order to make proper inferences and interpretations from the statistics, however, several points must be kept in mind. First, comparisons resulting in large t statistics may appear to merit special note. This is not always the case, because the size of the t statistic depends not only on the observed differences in means or the percentage being compared, but also on the standard error of the difference. Thus, a small difference between two groups with a much smaller standard error could result in a large t statistic, but this small difference is not necessarily noteworthy.

Second, when multiple statistical comparisons are made on the same data, it becomes increasingly likely that an indication of a population difference is erroneous. Even when there is no difference in the population, at an alpha level of .05, there is still a 5 percent chance of concluding that an observe t value representing one comparison in the sample is large enough to be

[1] A. Birnbaum. (1968). "Some Latent Trait Models." In F.M. Lord and M.R. Novick, *Statistical Theories of Mental Test Scores*. Reading, MA: Addison-Wesley. F.M. Lord. (1980). *Applications of Item Response Theory to Practical Testing Problems*. Hillsdale, NJ: Erlbaum.

statistically significant. As the number of comparisons increases, the risk of making such an error in inference also increases.

To guard against errors of inference based upon multiple comparisons, the Bonferroni procedure to correct significance tests for multiple contrasts was used. This method corrects the significance (or alpha) level for the total number of contrasts made with a particular classification variable. For each classification variable, there are $(K \cdot (K-1))/2$ possible contrasts (or nonredundant pairwise comparisons), where K is the number of categories. The Bonferroni procedure divides the alpha level for a single t test (for example, .05) by the number of possible pairwise comparisons in order to give a new alpha that is corrected for the fact that multiple contrasts are being made.

Readers of this report are advised to use statistical tests of this nature to make their own comparisons and interpretations of the data reported herein.

APPENDIX C

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